

**CURRICULUM**

**FOR THE TRADE OF**

**Tiling**

**UNDER**

**APPRENTICESHIP TRAINING SCHEME**

**GOVERNMENT OF INDIA**  
**MINISTRY OF SKILL DEVELOPMENT AND ENTREPRENEURSHIP**  
**DIRECTORATE GENERAL OF TRAINING**

1. **Category of trade** : Non-Engineering
2. **Name of the Trade** :Tiling
3. **Duration of Apprenticeship Training** : **24 Months**  
***Break up of the Apprenticeship Training***
- (i) **Duration of Basic Training** : 6 (3+3) months / 1200 Hrs
- (ii) **Duration of Practical Training/  
On-the-job Training:** 18 (9+9) Months
4. **Entry Qualification** : **5<sup>th</sup> Pass**
- (A) **Basic training components**
- (i) Employability Skills – 110 Hrs
- (ii) Basic numeracy - 50 Hrs
- (iii) Trade theory - 120+120 Hrs
- (iv) Trade practical - 400+400 Hrs
- (B) **Practical Training/On-the job training** : 18 Months

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## 1. ACKNOWLEDGEMENT

L&T Construction Corporate Centre, HQ, sincerely acknowledges with thanks the contribution and cooperation extended by the Construction Skills Training Institutes and project sites of L&T projects, Trade Experts, Subject Matter Experts and all others to bring out this curriculum for the trade of **Tiling (under Finishing and Joineries of Building)** under Apprenticeship Training Scheme.

Special acknowledgement to the following departments in L&T Construction who have contributed valuable inputs in bringing out these curricula through their expert members:

1. Competency Development Centre
2. Skills training institutes Facilities & Management Team
3. Principals and Master Trainers
4. Subject Matter Experts from respective department
5. VACUM (Vocational Curriculum) Development team of L&T Construction Skills Training Department

## 2. BACKGROUND

### 2. 1. Apprenticeship Training Scheme under Apprentice Act 1961

The Apprentices Act, 1961 was enacted with the objective of regulating the programme of training of apprentices in the industry by utilizing the facilities available therein for imparting on-the-job training. The Act makes it obligatory for employers in specified industries to engage apprentices in designated trades to impart Apprenticeship Training on the job in industry to school leavers and person having National Trade Certificate(ITI pass-outs) issued by National Council for Vocational Training (NCVT) to develop skilled manpower for the industry. There are four categories of apprentices namely; **tradeapprentice, graduate, technician and technician (vocational) apprentices.**

Qualifications and period of apprenticeship training of **trade apprentices** vary from trade to trade. The apprenticeship training for trade apprentices consists of basic training followed by practical training. At the end of the training, the apprentices are required to appear in a trade test conducted by NCVT and those successful in the trade tests are awarded the National Apprenticeship Certificate.

The period of apprenticeship training for graduate (engineers), technician (diploma holders and technician (vocational) apprentices is one year. Certificates are awarded on completion of training by the Department of Education, Ministry of Human Resource Development.

## **2. 2. Changes in Industrial Scenario**

Recently we have seen huge changes in the Indian industry. The Indian Industry registered an impressive growth during the last decade and half. The number of industries in India have increased manifold in the last fifteen years especially in services and manufacturing sectors. It has been realized that India would become a prosperous and a modern state by raising skill levels, including by engaging a larger proportion of apprentices, will be critical to success; as will stronger collaboration between industry and the trainees to ensure the supply of skilled workforce and drive development through employment. Various initiatives to build up an adequate infrastructure for rapid industrialization and improve the industrial scenario in India have been taken.

## **2. 3. Reformation**

The Apprentices Act, 1961 has been amended and brought into effect from 22<sup>nd</sup> December, 2014 to make it more responsive to industry and youth. Key amendments are as given below:

- Prescription of number of apprentices to be engaged at establishment level instead of trade-wise.
- Establishment can also engage apprentices in optional trades which are not designated, with the discretion of entry level qualification and syllabus.
- Scope has been extended also to non-engineering occupations.
- Establishments have been permitted to outsource basic training in an institute of their choice.
- The burden of compliance on industry has been reduced significantly.

### 3. RATIONALE

#### [Need for Apprenticeship as Construction works]

In a construction industry, the identification and selection of most important construction trades, which covers almost 80% of the construction work activities. These trades cover Bar bending, Masonry, Formwork, Plumbing, Finishing-Tiling, Lab Technician, Surveyor, Electrician, Welding, CCTV, Optical Fibre Cable (OFC) and all sectorial activities. It will covers the Construction, Installation & Surveillance and Infrastructure industries.

The greater degree of relevance of the training with latest advancements of the industry will enhance the employability opportunities.

1. Finish edges of tiles and corner tiles
2. Fix stone slabs or strips in dado using mechanical fixtures.
3. Fix ceramic/ glazed tiles on walls without hollowness between plaster finish and tiles.
4. Fix ceramic/ glazed tiles in patterns.
5. Fix tiles with joints coinciding with plumbing, electrical and other service fixtures
6. Use hand cutting machine to cut natural stone to required size and shape.
7. Polish the edge of natural stone tiles.
8. Fix tiles in staircase with required profile
9. Mix pigments in cement to attain the required shade while for wall tile fixing mason day pointing.
10. Use safe working practices.
11. Use and maintain correct tools, equipment and material.
12. Keep clean and safe working conditions.
13. Estimate the amount of material required to complete a specific job.

14. Detect and rectify fine and subtle mistakes in finished work.
15. Check and carry out corrections to achieve quality in tiling work within tolerance limits as follows,
16. Mark tile module layout, within required accuracy, from reference lines.
17. Establish the correct floor reference level and spot levels.
18. Check floor screed/wall base coat profiles using diagonal measurements and mason's square.
19. Provide required slope/ gradient in flooring.
20. Lay cement sand screed on the floor to the required thickness.
21. Check tiles for their squareness and manufacturing defects.
22. Sort and separate tiles for proper shade and texture.
23. Use cutting machine to cut tiles to required shape and size
24. Fix tiles using cement paste/slurry or adhesive.
25. Use spirit level with straight edge to check levels at required intervals
26. Plaster base coat to fix tiles in one plane and plumb
27. Fix skirting tiles using cement paste/slurry or adhesive



## 4. JOB ROLE

### **Brief description of Job role:**

Tiling Trade is one of the basic trades in the Construction Industry which is common to all types of constructions and has variance with respect to specific requirements of the Project.

### **Brief Job Description of Tile Mason:**

In general, we can categorize floor and wall tile finishes into two types:

- Natural stone tiles (Marble, Granite, Kota, Dholpur stone, etc)
- Man-made tiles (Ceramic, Cement, Terrazzo, P.V.C.)

Tile Mason checks the materials, cuts, sizes, dresses and fixes tiles in floor / dado; co-ordinates, with activities of other services (eg. Electricity, Power, Plumbing, HVAC etc); to execute works to predetermined standards of given dimensional accuracy, levels and plumb within a tolerance as per relevant standards.

## 5. LEARNING OUTCOMES

### A. GENERIC OUTCOME

- ❖ Recognize & comply safe working practices, environment regulation and housekeeping.
- ❖ Work in a team, understand and practice soft skills, technical English to communicate with required clarity.
- ❖ Understand and explain the concept in quality tools and labour welfare legislation and apply such in day to day work to improve productivity & quality.
- ❖ Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
- ❖ Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.
- ❖ Understand and apply basic computer working, basic operating system and uses internet services to get accustomed & take benefit of IT developments in the industry.

### B. SPECIFIC OUTCOME

The Trainees will be able to

- ❖ Finish edges of tiles and corner tiles
- ❖ Fix stone slabs or strips in dado using mechanical fixtures.
- ❖ Fix ceramic/ glazed tiles on walls without hollowness between plaster finish and tiles.
- ❖ Fix ceramic/ glazed tiles in patterns.
- ❖ Fix tiles with joints coinciding with plumbing, electrical and other service fixtures
- ❖ Use hand cutting machine to cut natural stone to required size and shape.
- ❖ Polish the edge of natural stone tiles.
- ❖ Fix tiles in staircase with required profile
- ❖ Mix pigments in cement to attain the required shade while for wall tile fixing mason day pointing.
- ❖ Use safe working practices.

- ❖ Use and maintain correct tools, equipment and material.
- ❖ Keep clean and safe working conditions.
- ❖ Estimate the amount of material required to complete a specific job.
- ❖ Detect and rectify fine and subtle mistakes in finished work.
- ❖ Check and carry out corrections to achieve quality in tiling work within tolerance limits as follows,
- ❖ Mark tile module layout, within required accuracy, from reference lines.
- ❖ Establish the correct floor reference level and spot levels.
- ❖ Check floor screed / wall base coat profiles using diagonal measurements and mason's square.
- ❖ Provide required slope / gradient in flooring.
- ❖ Lay cement sand screed on the floor to the required thickness.
- ❖ Check tiles for their squareness and manufacturing defects.
- ❖ Sort and separate tiles for proper shade and texture.
- ❖ Use cutting machine to cut tiles to required shape and size
- ❖ Fix tiles using cement paste /slurry or adhesive.
- ❖ Use spirit level with straight edge to check levels at required intervals
- ❖ Plaster base coat to fix tiles in one plane and plumb
- ❖ Fix skirting tiles using cement paste/slurry or adhesive

## 6. GENERAL INFORMATION

1. Name of the Trade : Tiling
2. Duration of Apprenticeship Training : 24 Months  
Basic Training : 6 Months  
Practical Training : 18 Months
3. Duration of Basic Training :
  - a. Block –I : 3 months
  - b. Block - II : 3 months
4. Total duration of Basic Training : 6 Months
5. Duration of Practical Training  
(On -job Training) : 18 Months
6. Entry Qualification : **5<sup>th</sup> Pass**
7. Selection of Apprentices : The apprentices will be selected as per Apprenticeship Act amended time to time.
8. Rebate for ITI passed trainees : NA

**Note:** Industry may impart training as per above time schedule, however this is not fixed. The industry may adjust the duration of training considering the fact that all the components under the syllabus must be covered. However the flexibility should be given keeping in view that no safety aspect is compromised and duration of industry training to be remains as 1 year.

## 7. COURSE STRUCTURE

Training duration details:-

<b>Time (in months)</b>	<b>1-3</b>	<b>4-12</b>	<b>13-15</b>	<b>16-24</b>
<b>Controlled Condition training</b>	Part A	-----	Part B	-----
<b>On-job training</b>	-----	Part A	-----	Part B

Components of training	Duration of training in Months																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Controlled Condition Training Part A																									
On Job Training, Part A																									
Controlled Condition Training Part B ( @ site)																									
On Job Training, Part B																									

**8. SYLLABUS**  
**8.1 BASIC TRAINING**  
**(Part A & B)**  
**DURATION: 06 MONTHS**

**GENERAL INFORMATION**

- 1) Name of the Trade : Tiling
- 2) Hours of Instruction : 800 Hrs.
- 3) Batch size : 20
- 4) Power Norms : NA
- 5) Space Norms : NA
- 6) Examination : The internal assessment will be held on completion of each Block.
- 7) Instructor Qualification :

a) Degree/Diploma in Engineering or Masters from recognized university/Board with one/two year post qualification experience respectively in the relevant field.

8) Tools, Equipment's & Machinery required: - As per Annexure – I

## 8.1.1 Details of Syllabus of Core Skill

### COURSE CONTENTS:-

<b>Introduction to Basic Competencies</b>
<ul style="list-style-type: none"> <li>• Introduction to Trade and duties of "Tiler"</li> <li>• Occupational health hazards, Personal Protective Equipment's (PPE) usage and working at heights</li> <li>• Introduction, Handling, Storing and Maintenance of Tools, Materials, Consumables and Small equipment's</li> <li>• Understanding tolerance limits, measuring in MKS system, field testing of Materials and Consumables.</li> </ul>

### Controlled Condition Training (Part A and Part B)

**Duration: 6 Months (3 Month in each part)**

#### Controlled Condition Training, Part A: 3 Months

<b>Practical Competencies</b>	<b>Underpinning Knowledge (Theory)</b>
<ul style="list-style-type: none"> <li>• Prepare Surface to Receive Tiles/Stone</li> </ul>	<ul style="list-style-type: none"> <li>• Marking out tile/stone pattern</li> <li>• Transfer spot levels</li> </ul>
<ul style="list-style-type: none"> <li>• Mixing Bed Mortar/Adhesive</li> </ul>	<ul style="list-style-type: none"> <li>• Proportion mortar ingredients for specific mixes</li> <li>• Types of sand, cement, lime, water, Mixing procedure</li> <li>• Mix mortar manually with hand tools &amp; Equipments</li> <li>• Lifting, carrying &amp; moving</li> <li>• Site tidiness</li> <li>• Correct safety practice</li> </ul>



<ul style="list-style-type: none"> <li>• Cutting of Tiles/stones</li> </ul>	<ul style="list-style-type: none"> <li>• Mark on the tile/stone as per drawing</li> <li>• Hold the tile/stone manually/equipment</li> <li>• Cut tile/stone with hand tools &amp; Equipments in required shape (Straight/Curve/Hole making)</li> <li>• Site tidiness</li> <li>• Correct safety practice</li> </ul>
<ul style="list-style-type: none"> <li>• Finishing Around Special Cutouts/Opening</li> </ul>	<ul style="list-style-type: none"> <li>• Mark on the tile/stone as per drawing</li> <li>• Hold the tile/stone manually/equipment</li> <li>• Cut tile/stone with hand tools &amp; Equipments in required shape (Straight/Curve/Hole making)</li> <li>• Site tidiness</li> <li>• Correct safety practice</li> </ul>

**Controlled Condition Training, Part B: 3 Months**

<b>Practical Competencies</b>	<b>Underpinning Knowledge (Theory)</b>
<ul style="list-style-type: none"> <li>• Grouping of Tiles/stone</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Sorting of Tiles/Stones</b> <ul style="list-style-type: none"> <li>✓ Check tolerance</li> <li>✓ Arranging Tiles/Stones According To Shade/Colour</li> <li>✓ Safety</li> <li>✓ Site tidiness</li> </ul> </li> <li>• Laying of Tiles/Stones           <ul style="list-style-type: none"> <li>✓ Holding of tiles/stone</li> <li>✓ Lifting carrying &amp; moving of tiles/stone</li> <li>✓ Placing tile/stone</li> <li>✓ Checking as per drawing</li> <li>✓ Site tidiness</li> <li>✓ Correct safety practice</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Pointing joints to Required Shade</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of grout</li> <li>• Apply grout through form</li> <li>• Check tolerance</li> <li>• Site tidiness</li> <li>• Correct safety practice</li> </ul>
<ul style="list-style-type: none"> <li>• Lay Tiles/stone To Required Pattern and Profile</li> </ul>	<ul style="list-style-type: none"> <li>• Floors</li> <li>• Skirting/Dadoing</li> <li>• Staircase</li> </ul>
<ul style="list-style-type: none"> <li>• Final Testing &amp; Evaluation</li> </ul>	

## **8.1.2 EMPLOYABILITY SKILLS**

### **GENERAL INFORMATION**

- 1) **Name of the subject** : **EMPLOYABILITY SKILLS**
- 2) **Applicability** : ATS- Mandatory for fresher only
- 3) **Hours of Instruction** : 110 Hrs.
- 4) **Examination** : The examination will be held at the end of two years Training by CSDCI.
- 5) **Instructor Qualification** :

i) MBA/BBA with two years experience or graduate in sociology/social welfare/Economics with two years experience and trained in Employability skill from DGET Institute.

And

Must have studied in English/Communication Skill and Basic Computer at 12<sup>th</sup> /diploma level

OR

ii) Existing Social Study Instructor duly trained in Employability Skill from DGET Institute.

### 8.1.3 SYLLABUS OF EMPLOYABILITY SKILLS

#### Part A

#### Basic Training

Topic No.	Topic	Duration (in hours)
	<b>English Literacy</b>	
1	<b>Pronunciation :</b> Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)	<b>20</b>
2	<b>Functional Grammar</b> Transformation of sentences, Voice change, Change of tense, Spellings.	
3	<b>Reading</b> Reading and understanding simple sentences about self, work and environment	
4	<b>Writing</b> Construction of simple sentences Writing simple English	
5	<b>Speaking / Spoken English</b> Speaking with preparation on self, on family, on friends/ classmates, on know, picture reading gain confidence through role-playing and discussions on current happening job description, asking about someone's job habitual actions. Cardinal (fundamental) numbers ordinal numbers. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.	

	<b>I.T. Literacy</b>	
<b>1</b>	<p><b>Basics of Computer</b></p> <p>Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.</p>	
<b>2</b>	<p><b>Computer Operating System</b></p> <p>Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.</p>	
<b>3</b>	<p><b>Word processing and Worksheet</b></p> <p>Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion &amp; creation of Tables. Printing document.</p> <p>Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets</p>	<b>20</b>
<b>4</b>	<p><b>Computer Networking and INTERNET</b></p> <p>Basic of computer Networks (using real life examples), Definitions of Local Area Network (LAN), Wide Area Network (WAN), Internet, Concept of Internet (Network of Networks), Meaning of World Wide Web (WWW), Web Browser, Web Site, Web page and Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication.</p> <p>Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cyber crimes.</p>	

	<b>Communication Skill</b>	
<b>1</b>	<b>Introduction to Communication Skills</b> Communication and its importance Principles of Effective communication Types of communication - verbal, non verbal, written, email, talking on phone. Non verbal communication -characteristics, components-Para-language Body - language Barriers to communication and dealing with barriers. Handling nervousness/ discomfort.	<b>15</b>
<b>2</b>	<b>Listening Skills</b> Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening. Triple- A Listening - Attitude, Attention & Adjustment. Active Listening Skills.	
<b>3</b>	<b>Motivational Training</b> Characteristics Essential to Achieving Success The Power of Positive Attitude Self awareness Importance of Commitment Ethics and Values Ways to Motivate Oneself Personal Goal setting and Employability Planning.	
<b>4</b>	<b>Facing Interviews</b> Manners, Etiquettes, Dress code for an interview Do's & Don'ts for an interview	
<b>5</b>	<b>Behavioral Skills</b> Problem Solving Confidence Building Attitude	

Topic No.	Topic	Duration (in hours)
	<b>Entrepreneurship skill</b>	
1	<b>Concept of Entrepreneurship</b> <b>Entrepreneurship</b> - Entrepreneurship - Enterprises:- Conceptual issue Entrepreneurship vs. Management, Entrepreneurial motivation. Performance & Record, Role & Function of entrepreneurs in relation to the enterprise & relation to the economy, Source of business ideas, Entrepreneurial opportunities, The process of setting up a business.	<b>15</b>
2	<b>Project Preparation &amp; Marketing analysis</b> Qualities of a good Entrepreneur, SWOT and Risk Analysis. Concept & application of Product Life Cycle (PLC), Sales & distribution Management. Different Between Small Scale & Large Scale Business, Market Survey, Method of marketing, Publicity and advertisement, Marketing Mix.	
3	<b>Institutions Support</b> Preparation of Project. Role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes & procedure & the available scheme.	
4	<b>Investment Procurement</b> Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation & Costing, Investment procedure - Loan procurement - Banking Processes.	
	<b>Productivity</b>	
1	<b>Productivity</b> Definition, Necessity, Meaning of GDP.	

2	<b>Affecting Factors</b> Skills, Working Aids, Automation, Environment, Motivation How improves or slows down.	<b>10</b>
3	<b>Comparison with developed countries</b> Comparative productivity in developed countries (viz. Germany, Japan and Australia) in selected industries e.g. Manufacturing, Steel, Mining, Construction etc. Living standards of those countries, wages.	
4	<b>Personal Finance Management</b> Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.	
	<b>Occupational Safety, Health &amp; Environment Education</b>	
1	<b>Safety &amp; Health</b> Introduction to Occupational Safety and Health importance of safety and health at workplace.	<b>15</b>
2	<b>Occupational Hazards</b> Basic Hazards, Chemical Hazards, Vibroacoustic Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards. Occupational health, Occupational hygienic, Occupational Diseases/ Disorders & its prevention.	
3	<b>Accident &amp; safety</b> Basic principles for protective equipment. Accident Prevention techniques - control of accidents and safety measures.	
4	<b>First Aid</b> Care of injured & Sick at the workplaces, First-Aid & Transportation of sick person	
5	<b>Basic Provisions</b> Idea of basic provision legislation of India. of safety, health, welfare under legislation of India.	
6	<b>Ecosystem</b> Introduction to Environment. Relationship between Society and Environment, Ecosystem and Factors causing imbalance.	



7	<b>Pollution</b> Pollution and pollutants including liquid, gaseous, solid and hazardous waste.	
8	<b>Energy Conservation</b> Conservation of Energy, re-use and recycle.	
9	<b>Global warming</b> Global warming, climate change and Ozone layer depletion.	
10	<b>Ground Water</b> Hydrological cycle, ground and surface water, Conservation and Harvesting of water	
11	<b>Environment</b> Right attitude towards environment, Maintenance of in -house environment	
<b>Labour Welfare Legislation</b>		
1	<b>Welfare Acts</b> Benefits guaranteed under various acts- Factories Act, Apprenticeship Act, Employees State Insurance Act (ESI), Payment Wages Act, Employees Provident Fund Act, The Workmen's compensation Act.	
<b>Quality Tools</b>		10
1	<b>Quality Consciousness :</b> Meaning of quality, Quality Characteristic	
2	<b>Quality Circles :</b> Definition, Advantage of small group activity, objectives of quality Circle, Roles and function of Quality Circles in Organization, Operation of Quality circle. Approaches to starting Quality Circles, Steps for continuation Quality Circles.	
3	<b>Quality Management System :</b> Idea of ISO 9000 and BIS systems and its importance in maintaining qualities.	
4	<b>House Keeping :</b> Purpose of Housekeeping, Practice of good Housekeeping.	
5	<b>Quality Tools</b> Basic quality tools with a few examples	

## **8.2 BASIC NUMERACY**

### **GENERAL INFORMATION**

- 6) **Name of the subject** : **BASIC NUMERACY**
- 7) **Applicability** : ATS- Mandatory for fresher only
- 8) **Hours of Instruction** : 50 Hrs.
- 9) **Examination** : The examination will be held at the end of two years Training by CSDCI.
- 10) **Instructor Qualification** :

iii) MBA/BBA with two years experience or graduate in Science and Mathematics with two years experience and trained in Basic Numeracy from DGET Institute.

And

Must have studied in Mathematics at 12<sup>th</sup> /diploma level

## 8.2.1 SYLLABUS OF BASIC NUMERACY

### Basic Training

Topic No.	Topic	Duration (in hours)
	<b>English Literacy</b>	<b>50 Hrs</b>
<b>1</b>	Number System/Fractions	
<b>2</b>	Square Root/Cube Root	
<b>3</b>	Average/Percentage	
<b>4</b>	Area Calculation- Triangles, Quadrilaterals	
<b>5</b>	Concept of geometry- Square, Rectangle, Circle, Triangle	
<b>6</b>	Basic Trigonometry	

## **8.3 PRACTICAL TRAINING (ON-JOB TRAINING)**

### **(Part A & B)**

#### **DURATION: 18 MONTHS**

#### **Broad Skill Components to be covered during On-Job Training**

##### **On Job Training, Part A: 9 Months**

- 1) Prepare Surface to Receive Tiles/Stone
- 2) Mixing Bed Mortar/Adhesive
- 3) Cutting of Tiles/stones
- 4) Finishing Around Special Cut outs/Opening

##### **On Job Training, Part B: 9 Months**

- 1) Grouping of Tiles/stone
- 2) Pointing Joints to Required Shade
- 3) Lay Tiles/stone To Required Pattern and Profile

#### **4. Instructors Qualification:**

i) Degree/Diploma in **Civil** Engg. from recognized university/Board With one/two year post qualification experience in the relevant field.

**OR**

ii) ITI in relevant trade with three year experience / 8 years' experience in the relevant field with 10<sup>th</sup> Qualification.

#### **5. Infrastructure for On-Job Training: Ongoing Project sites**

## 9. ASSESSMENT STANDARD

### Assessment Guideline

Successful achievement of the partial assessment is the professional judgement of the instructor/assessor. Failure to demonstrate the appropriate practical skills and practices to the satisfaction of the Assessor will result in a failure of the course. The following area will be considered.

Selection of materials, Understanding of drawing, Quality of work (Functional aspects, Dimensional features, Surface finish), Personal safety, time taken to complete the job.

If the delegate fail a course the Training Provider must make a recommendation outline a time period required for the delegate to gain sufficient industry experinece prior to repete the course.

**A sample assessment sheet is below**

<i>Assessment Sheet - Tiling</i>					
Name		Batch	Roll No	Allotted Time	
<u>S.No</u>	Standards		Permitted Tolerance	Observed Variations	Assessment ✓ / ✗
1	Radius from corner on both the sides		$\pm 2$ mm		
2	Curve smoothness		Undulation free		
3	Crack/chip/broken		Crack/chip not allowed		
4	Surface neatness				
5	Date				
6	Time of Commencement				
7	Time of Completion				
8	Time Taken				
9	Overall assessment		( Pass / Fail)		
10	Demonstrator	Name			
		Sign			
11	Instructor	Name			
		Sign			

## 10. FURTHER LEARNING PATHWAYS

- On successful completion of the course trainees can opt for any charge hand/ foreman / supervisory course under CSDCI.

### **Employment opportunities:**

On successful completion of this course, the candidates may be gainfully employed in the following industries:

1. Construction Sector – Structural activities.

**ANNEXURE – I**

**TOOLS & EQUIPMENT FOR BASIC TRAINING**

**INFRASTRUCTURE FOR PROFESSIONAL SKILL & PROFESSIONAL KNOWLEDGE**

**TRADE: Storage and Inventory Executive (warehouse/Manufacturing plant)**

**LIST OF TOOLS & EQUIPMENTS FOR 20 APPRENTICES**

**A : TRAINEES TOOL KIT:-**

Note: 2 Trainees in one Group X 10 Groups = 20 Trainees			
Sl. No	Name of Equipment and Tools as per prescribed Norms	UoM	Quantity Required
1	Mason Trowel ( Big )	No	20
2	Rubber Grout float	No	10
3	Sponge	No	10
4	Spacers 2mm	No	300
5	Spacers 3mm	No	300
6	Rubber mallet	No	10
7	Tile nippers	No	5
8	Alluminium Straight edge (2 m)	No	10
9	Wheel barrow	No	5
10	chalk box	No	4
11	Slate Pencil Box	No	4
12	Line thread (Nylon)	Bundle	10
13	Steel scale (1000 mm)	No	20



14	PVC clear Water Level tube (8 mm dia)	RMT	50
15	Sprit level (2000 mm Long )	No	10
16	Sprit level (1200 mm Long )	No	10
17	Tri-square (300 mm)	No	20
18	Mortar pan (300 mm dia) G.I.	No	10
19	Spade with handle (phawra)	No	10
20	G.I. bucket (5 ltr. capacity)	No	10
21	Plastic mug (1 ltr. capacity)	No	10
22	Rule Support - 50 cm	Set	10
23	Template for Diagonal Tile Laying	Set	2
24	Hole Marker	No	2
25	Adjustable Shape Template	No	2
26	Joint Scraper	No	10
27	Notched Trowel - 4.5mm X 4.5mm	No	10
28	Notched Trowel - 6 mm X 6 mm	No	10
29	Notched Trowel - 8 mm X 8mm	No	10
30	Notched Trowel - 10 mm X 10 mm	No	10
31	Manual Tile Cutter STAR 60 - N	No	2
32	Electrical Core Cutter Bit 28mm dia	No	5
33	Electrical Core Cutter Bit 35mm dia	No	5
34	Tile Drilling M/c ( Electric )	No	10
35	Tile Cutting M/c ( Electric )	No	10

36	Abrasive Stone	No	5
37	Tile Cutting Blade ( 4 " )	No	10
38	PVC Corner Beading 8mm, VWS T10	RMT	60
39	PVC Corner Beading 10mm, VWS T12	RMT	60
40	PVC Inner Corner Single leg, TIC 12	RMT	60
41	Rubber Hand Gloves	Pair	20
42	Ear Plug	No	20
43	Safety Goggle ( Plain White )	No	20

**Note:** In case of basic training setup by the industry the tools, equipment and machinery available in the industry may also be used for imparting basic training.

### **INFRASTRUCTURE FOR ON-JOB TRAINING**

Actual training will be conducted at ongoing construction project sites

## ANNEXURE-II

### GUIDELINES FOR INSTRUCTORS AND PAPER SETTERS

1. Due care to be taken for proper & inclusive delivery among the batch. Some of the following some method of delivery may be adopted:

- A) LECTURE
- B) LESSON
- C) DEMONSTRATION
- D) PRACTICE
- E) GROUP DISCUSSION
- F) DISCUSSION WITH PEER GROUP
- G) PROJECT WORK
- H) INDUSTRIAL VISIT

2. Maximum utilization of latest form of training viz., audio visual aids, integration of IT, etc. may be adopted.

3. The total hours to be devoted against each topic may be decided with due Diligence to safety & with prioritizing transfer of required skills.