

PROJECT PROFILE ON DECORATION OF CERAMIC TILES

PRODUCT : Decoration of Ceramic Tiles

NIC CODE : Not Available
(Based on NIC – 2008)

PRODUCT CODE : Not Available
(Based on ASICC – 2000)

PRODUCTION CAPACITY :

Quantity : 36000 sq. ft. per annum

Value : Rs 6480000 per annum

QUALITY STANDARD : Not Available

MONTH & YEAR : June 2021
of Preparation

PREPARED BY : MSME Development Institute
Govt of India, Ministry of MSME
65/1, G.S.T. Road, Guindy,
Chennai - 600 032
Phone: 044-22501011

PROJECT PROFILE ON DECORATION OF CERAMIC TILES

A. INTRODUCTION OF THE PRODUCT

Ceramic tiles are manufactured by several companies in the country. Ceramic tiles are of two types: wall tiles and floor tiles. Ceramic tiles come in various sizes and designs. This project envisages the decoration of ceramic wall tiles by screen printing and ceramic transfer techniques.

B. MARKET & DEMAND ASPECTS

Ceramic tiles are also decorated by the companies manufacturing the tiles. However, there is niche market for decorated ceramic tiles to meet the specific needs and requirements of individual customers or contractors taking up construction of domestic and commercial buildings.

C. IMPLEMENTATION SCHEDULE

Sl.	Description of the activity	Time (approx.)
1	Selection of the product	1 month
2	Preparation of the project report	
3	Selection of the location	
4	Registration of the enterprise	
5	Mobilising finance for the project	4 months
6	Procurement of machinery and equipment	
7	Obtaining EB connection	
8	Erection and commissioning of machinery and equipment	1 month
9	Recruitment of manpower	
10	Trial run and commencement of production	
	Total project implementation period	6 months

D. PRESUMPTIONS

- (1) Interest rate: 10% per annum on total capital investment is taken into consideration
- (2) Margin money: The promoter may bring in one-fourth to one-third of both fixed capital and working capital requirements.
- (3) Efficiency: 75% utilisation of machinery and manpower has been considered.
- (4) Labour wages: Minimum wages applicable for semi-skilled and unskilled workers were taken into consideration.
- (5) Working shifts per day: It is envisaged that the enterprise will be in operation on single shift of 8 hours per day basis for 300 working days in year.

PROJECT PROFILE ON DECORATION OF CERAMIC TILES

(6) Implementation period: Project implementation period of 6 months is envisaged.

(7) Payback period: It is about 5 years.

E. TECHNICAL ASPECTS

1. RAW MATERIALS

Ceramic wall tiles are procured by the entrepreneur himself and decorated. Alternatively, they may be purchased by the building contractors and given to the unit on job work basis for decorating as per the custom designs of the customers. If the job works are undertaken, working capital requirement will be reduced.

Ceramic transfer labels, ceramic colours and printing oils are other raw materials required for the project.

2. MANUFACTURING PROCESS

Decoration of ceramic tiles by the following two techniques is envisaged in the project:

(1) Ceramic Transfer Technique

Ceramic tiles are kept neat on the decorating surface by wiping with a dry and smooth cloth. Ceramic transfer labels, also called ceramic decals, are available in various designs viz. pictures of gods, flowers, designed borders, etc. The selected ceramic transfers are put in water for a while and taken out. Now the moist ceramic transfer is placed on the ceramic tile surface at desired location and gently removed the release paper, resting the transfer label firmly on the tile surface. A soft rubber squeeze may be used for rolling on the transfer label to remove any air bubbles between the surface of the tile and transfer label. Moisture if any is wiped out from the surface of the tile using a cotton cloth. Ceramic tiles so fixed with transfers are stacked in metallic stands and heated in an electrical furnace for optimum temperatures (750°C to 800°C) recommended by the manufacturers of ceramic transfers.

(2) Screen Printing Technique

Nylon screens of appropriate mesh size are fitted on aluminium or wooden frames. Alternatively, screens are pre-fitted to the aluminium or wooden frames may be purchased directly from dealers supplying screen printing materials. The desired design stencil is developed on the screen by applying a screen coating

PROJECT PROFILE ON DECORATION OF CERAMIC TILES

solution mixed with a photo-sensitizer. Pre sensitized special type of films may also be used for developing the design on the screen.

Ceramic colours are available with suppliers in the form of fine powders along with printing oil media. Printing oil media is either available separately to be mixed with ceramic colours and it comes readily premixed with colours from the suppliers. These ceramic colours are used for decorating the ceramic tiles using screen printing technique onto the surface of ceramic tiles using the above prepared screens of desired designs.

Ceramic tiles, after screen printing with colours, are stacked in metallic stands and heated in electrical furnace for optimum temperatures (750°C to 800°C) recommended by the ceramic colour manufacturers.

Heating and cooling is done gradually so that cracks are not developed in the tiles and decorated design formed a permanent part of the tile with a smooth finish. Electrical resistance heating type furnaces are used for heating. Ceramic fibre lining is used in the furnace for electrical energy conservation purpose. Stands are made using rods of heat resistant stainless varieties to stack ceramic tiles in the electrical furnace.

3. QUALITY SPECIFICATIONS

There is no Indian Standard Specification for decoration of ceramic tiles. However, the decorated ceramic tiles need to meet the customer needs and preferences.

4. PRODUCTION CAPACITY

The plant and machinery proposed in the project has a production capacity of 48000 sq. ft. of decorated ceramic tiles. At 75% utilisation of the capacity, productions of 36000 sq. ft. of decorated ceramic tiles have been taken into consideration.

5. UTILITIES: 25 kW power for industrial purpose is required.

6. POLLUTION CONTROL: There is no pollution involved in the operations.

7. ENERGY CONSERVATION: Electrical furnace will be lined with ceramic fibre for energy efficiency.

PROJECT PROFILE ON DECORATION OF CERAMIC TILES

F. FINANCIAL ASPECTS

1. FIXED CAPITAL

(1) LAND & BUILDING

A rented premise of having a covered area of 1000 sq. ft. is envisaged for the enterprise. A rental value of Rs 20000/- per month is taken into account. This amount has been shown in estimation of working capital requirement.

(2) MACHINERY & EQUIPMENT

Sl.	Description	Quantity	Units	Rate per unit (Rs)	Amount (Rs)
1	Resistance heating type electrical furnace with one cubic meter heating space.	1	No.	1200000	1200000
2	Electrical and EB charges for 25 kW power connection				200000
3	Erection and commissioning charges				140000
4	Screen printing frames, tools and accessories	LS			60000
5	Metallic stands	LS			140000
6	Office equipment and furniture	LS			160000
	TOTAL				1900000

(3) PREOPERATIVE EXPENSES Rs 100000

(4) TOTAL FIXED CAPITAL Rs 2000000

2. WORKING CAPITAL (PER MONTH)

(1) SALARY & WAGES (PER MONTH)

Sl.	Description	No.	Salary (Rs)	Amount (Rs)
1	Skilled or semi-skilled workers	2	10000	20000
2	Unskilled workers	2	7000	14000
	Perquisites			6000
	TOTAL			40000

PROJECT PROFILE ON DECORATION OF CERAMIC TILES

(2) RAW MATERIALS (PER MONTH)

Sl.	Description	Quantity	Units	Rate per unit (Rs)	Amount (Rs)
1	Ceramic tiles	3200	Sq. ft.	60	192000
2	Ceramic colours	4	Kg	10000	40000
3	Printing oils	4	Kg	2000	8000
4	Ceramic transfer labels	LS			75000
5	Packing materials	LS			15000
	TOTAL				330000

(3) UTILITIES (PER MONTH)

Sl.	Description	Quantity	Units	Rate per unit (Rs)	Amount (Rs)
1	Power	2000	kWh	8	16000
2	Water	50	KL	40	2000
	TOTAL				18000

(4) OTHER EXPENSES (PER MONTH)

Sl.	Description	Amount (Rs)
1	Office expenses, insurance and taxes	4000
2	Consumables	3000
3	Repairs and maintenance	3000
4	Sales expenses	5000
5	Rent	20000
	TOTAL	35000

(5) TOTAL WORKING CAPITAL (PER MONTH) Rs 423000

(6) WORKING CAPITAL FOR THREE MONTHS Rs 1269000

3. TOTAL CAPITAL INVESTMENT Rs 3269000

PROJECT PROFILE ON DECORATION OF CERAMIC TILES

G. FINANCIAL ANALYSIS

(1) COST OF PRODUCTION (PER ANNUM)

Sl.	Description	Amount (Rs)
1	Total recurring cost	5076000
2	Depreciation on Furnace @ 20%	240000
3	Depreciation on other m/c and equipment @ 10%	70000
4	Amortisation of pre-operative expenses @ 10%	10000
5	Interest on capital investment @ 10%	327000
	TOTAL	5723000

(2) SALES TURNOVER (PER YEAR)

Sl.	Product item	Quantity (sq. ft.)	Rate (Rs per sq. ft.)	Value (Rs)
1	Decorated ceramic tiles	36000	180	6480000

(3) NET PROFIT (PER YEAR) Rs 757000

(4) PROFIT RATIO ON SALES : 10.51%

$$\begin{aligned}
 \text{Profit Ratio On Sales} &= \frac{\text{Net Profit Per Year}}{\text{Sales Turnover Per Year}} \times 100 \\
 &= \frac{757000}{6480000} \times 100 = 10.51\%
 \end{aligned}$$

(5) RATE OF RETURN : 23.16%

$$\begin{aligned}
 \text{Rate of Return} &= \frac{\text{Net Profit Per Year}}{\text{Total Capital Investment}} \times 100 \\
 &= \frac{757000}{3269000} \times 100 = 23.16\%
 \end{aligned}$$

H. BREAK EVEN ANALYSIS

(1) FIXED COST PER YEAR

Sl.	Description	Amount (Rs)
1	Interest on capital investment	327000
2	Depreciations and amortisations	320000

PROJECT PROFILE ON DECORATION OF CERAMIC TILES

3	Rent, insurance and taxes	264000
4	40% of salaries and wages	192000
5	40% of other expenses (excluding rent, insurance & taxes)	62000
	TOTAL	1165000

(2) BREAK EVEN POINT (B.E.P.) : 60.61%

$$\begin{aligned} B.E.P. &= \frac{\text{Fixed Cost Per Year}}{\text{Fixed Cost Per Year} + \text{Net Profit Per Year}} \times 100 \\ &= \frac{1165000}{1922000} \times 100 = 60.61\% \end{aligned}$$

I. LIST OF SUPPLIERS FOR MACHINERY & EQUIPMENT

- (1) ESSCO Furnaces Private Limited, TS-63, Industrial Estate, Ekkattuthangal, Chennai – 600 097.
- (2) Fluidtherm Technology Private Limited, SP-132, 3rd Main Road, Ambattur Industrial Estate, Chennai – 600 058

J. LIST OF SUPPLIERS FOR RAW MATERIALS

- (1) Sukaso Ceracolours Private Limited, No.1275, Road No.63-A, Jubilee Hills, Hyderabad – 500 033.
- (2) Mulder India Private Limited, No.196 A-1, Bommasandra Industrial Area, Attibele Hobli, Anekal Taluq, Bengaluru – 560 099.