

## PROJECT PROFILE ON DECORATION OF CERAMIC TILES

PRODUCT : Decoration of Ceramic Tiles

PRODUCTION CAPACITY :

Quantity : 36000 sq. ft. per annum

Value : Rs 45 Lakhs per annum

QUALITY STANDARD : Not Available

MONTH & YEAR : November 2010  
of Preparation

PREPARED BY : Glass & Ceramics Division  
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## 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.

## 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.

## 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 enterprise with DIC	
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	
9	Recruitment of manpower	1 month
10	Trial run and commencement of production	
	<b>Total project implementation period</b>	<b>6 months</b>

## PRESUMPTIONS

- (1) Interest rate: 15% per annum on total capital investment is taken into consideration
- (2) Margin money: The promoter may bring in 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.

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

## 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 for decorating as per the custom designs of the customers.

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

## 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 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 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.

## **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.

## **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.

## **UTILITIES**

Electrical Power requirement: 25 kW power for industrial purpose is required.

## **FINANCIAL ASPECTS**

### **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 5000/- 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.	800000	800000
2	Electrical and EB charges for 25 kW power connection				100000
	Total				900000
3	Erection and commissioning charges @ 10%				90000
4	Screen printing frames, tools and accessories	LS		25000	25000
5	Metallic stands	LS		75000	75000
6	Office equipment	LS			60000
	<b>TOTAL</b>				<b>1140000</b>

(3) PREOPERATIVE EXPENSES Rs 60000

(4) TOTAL FIXED CAPITAL Rs 1200000

## WORKING CAPITAL (PER MONTH)

### (1) SALARY & WAGES (PER MONTH)

Sl	Description	No.	Salary (Rs)	Amount (Rs)
1	Skilled or semi-skilled workers	2	5000	10000
2	Unskilled workers	2	4000	8000
	Total			18000
	Perquisites @ 15%			2700
	<b>TOTAL</b>			<b>20700</b>

### (2) RAW MATERIALS (PER MONTH)

Sl	Description	Quantity	Units	Rate per unit (Rs)	Amount (Rs)
1	Ceramic tiles	3200	Sq. ft.	40	128000
2	Ceramic colours	4	Kg	6000	24000
3	Printing oils	4	Kg	1500	6000

4	Ceramic transfer labels	LS			50000
5	Packing materials	LS			12000
	<b>TOTAL</b>				<b>220000</b>

(3) UTILITIES (PER MONTH)

Sl	Description	Quantity	Units	Rate per unit (Rs)	Amount (Rs)
1	Power	2000	kWh	5	10000
2	Water	50	KL	20	1000
	<b>TOTAL</b>				<b>11000</b>

(4) MISCELLANEOUS EXPENSES (PER MONTH)

Sl	Description	Amount (Rs)
1	Office expenses	2000
2	Consumables	2000
3	Repairs and maintenance	2000
4	Sales expenses	4000
5	Rent	5000
	<b>TOTAL</b>	<b>15000</b>

(5) TOTAL WORKING CAPITAL (PER MONTH) Rs 276700

(6) WORKING CAPITAL FOR THREE MONTHS Rs 830100

(7) TOTAL CAPITAL INVESTMENT Rs 2030100

## FINANCIAL ANALYSIS

(1) COST OF PRODUCTION (PER ANNUM)

Sl	Description	Amount (Rs)
1	Total recurring cost	3320400
2	Depreciation on machinery and equipment @ 20%	228000
3	Amortisation of pre operative expenses @ 10%	6000
4	Interest on capital investment @ 15%	304500
	<b>TOTAL</b>	<b>3858900</b>

(2) SALES TURNOVER (PER YEAR)

Sl	Product item	Quantity	Rate.	Value
1	Decorated ceramic tiles	36000 sq. ft.	Rs 125/- per sq. ft.	Rs 4500000

(3) NET PROFIT (PER YEAR) Rs 641100

(4) PROFIT RATIO ON SALES 14.30%

$$\text{Profit Ratio On Sales} = \frac{\text{Net Profit Per Year}}{\text{Sales Turnover Per Year}} \times 100 = \frac{641100}{4500000} \times 100 = 14.30\%$$

(5) RATE OF RETURN 31.60%

$$\text{Rate of Return} = \frac{\text{Net Profit Per Year}}{\text{Total Capital Investment}} \times 100 = \frac{641100}{2030100} \times 100 = 31.60\%$$

### BREAK EVEN ANALYSIS

(1) FIXED COST PER YEAR

Sl	Description	Amount (Rs)
1	Interest on capital investment	304500
2	Depreciations and amortisation	234000
3	40% of salaries and wages	99400
4	40% of miscellaneous expenses	48000
5	Rent	60000
	<b>TOTAL</b>	<b>745900</b>

(2) BREAK EVEN POINT (B.E.P.) 53.80%

$$\text{B.E.P.} = \frac{\text{Fixed Cost Per Year}}{\text{Fixed Cost Per Year} + \text{Net Profit Per Year}} \times 100 = \frac{745900}{1387000} \times 100 = 53.80\%$$

#### LIST OF SUPPLIER ADDRESS FOR PLANT & MACHINERY

- (1) Heat Control Equipments, TS-78, Industrial Estate, Ekkattuthangal, Chennai – 600 097
- (2) Fluidtherm Technology Private Limited, SP-132, 3<sup>rd</sup> Main Road, Ambattur Industrial Estate, Chennai – 600 058

#### LIST OF SUPPLIER FOR RAW MATERIAL

- (1) Sukaso Ceracolours Private Limited, No.1275, Road No.63-A, Jubilee Hills, Hyderabad – 500 033
- (2) Ceradecor India Private Limited, F-90/21, Okhla, Phase-1, New Delhi – 110 020