

## **GLASS MIRROR**

1. Product : Glass Mirror
2. NIC Code : 2616
3. Product Code : 94189
4. Production Capacity : 1200 sq.mtr./annum
5. Month & year of Preparation : Jan.2011
6. Prepared by : Export Division,  
MSME-DI,Kolkata

### **INTRODUCTION**

Glass Mirror is made of good quality sheet/plate glass of different thickness varying from 2 m.m. to 7m.m. being coated one side with chemical to give the desired reflectance. It is popularly used for looking purpose by one and all in day-to-day life. It has got certain industrial uses also.

### **MARKET**

In view of the use of minerals, it can be said as an important and essential item without which one cannot imagine the present sophisticated modern life. This industry originated in Belgium and deep rooted in cosmopolitan cities of our country. In the household and new progressing industrial establishments, there is considerable demand for these mirrors. Mirrors are largely consumed by fancy shops, show rooms, theatres and offices in all toilets and bathroom etc.

It is an essential item in each and every house, since it is fragile it enjoys good replacement market also. Also the life of the present day silvering is only very few years. This adds to the replacement market based on the growing demand by the fancy of the people. The demand can be easily projected as follows keeping in mind, a conservative growth of 8%. The replacement demand to this product is estimated 5%. On the export front there is a very good demand in south-eastern countries. Though, there are large numbers of unit in the country mostly in Firozabad (UP). There is further scope for setting up new units in this line of manufacture in view of the growing demand.

## **BASIS AND PRESUMPTION :**

1. The proposed production of the unit is on single shift basis with 300 working days in a year.
2. The unit requires 1 to 2 months trial production to achieve full capacity.
3. The wages proposed in this profile are as per the prevailing wage practice.
4. Normal rate of interest of about 14% considered in the profile both for recurring and non-recurring investment.
5. Margin money is generally 25% and however it varies according to the location and the project and rules of financial Institutions.
6. The normal operative period is estimated to be more than 10 years life considering the technology involved in this industry.
7. Land value and construction cost has been taken on an average basis, sine it varies from place to place.
8. The cost of machinery and equipment has been proposed in the profile of the consulting the local machinery suppliers and traders.

## **IMPLEMENTATION SCHEDULE :**

The different stages of implementation from conception of the project to commercial production is given below :

<b>Sl. No.</b>	<b>Activity</b>	<b>Period</b>
1.	Survey for collection of Data in respect of demand, Raw materials including Power, Fuel, and Pollution Control	8 Weeks
2.	Arrangement of Margin Money, preparation of project document and registration	4 Weeks
3.	Financial Assistance, Selection of Sites and Development of Land	12 Weeks
4.	Make Shift Office	4 Weeks
5.	Electricity, Fuel and Water tying up for availability	5 Weeks
6.	Selection of sheds and raw material, replacement of orders	6 Weeks
7.	Selection of machines and Placement of Order	4 Weeks
8.	Transportation and Installation of Machine and Equipments	6 Weeks
9.	Receipt of Raw-Materials	4 Weeks

## **TECHNICAL ASPECTS :**

The most important process in the manufacturing of mirror is silvering on glass. The following various operation are involved in the process of manufacturing of mirrors :

- i. Selection of glass sheet.
- ii. Cleaning.
- iii. Sensitizing.
- iv. Silvering.
- v. Coppering
- vi. Painting.

Plate glass and sheet glass are cleaned by chemical process or by surface polishing to clean the surface contamination so as to give proper adherence.

They are given further treatment known as sensitizing makes the surface active for attracting the silver metal to form a quick adherence and uniform coating of film. Then the plate and sheet glasses are silvered either by spraying process or by pouring method. Then they are given copper coating to protective coating by painting either with red lead and varnish or cellulose enamel twin.

### **i. Quality Specification**

The following specification have been formatted and published by the Bureau of Indian Standards for guidance in maintenance of the quality of the product :

- |              |  |
|--------------|--|
| IS:3438-1977 | - Silvered glass mirror for general purpose (1 <sup>st</sup> revision) |
| IS:6184-1971 | - Specification for furniture mirror (Re-affirmed 1987)                |

### **ii. Production Quantity (Annual)**

- |             |   |                 |
|-------------|---|-----------------|
| a. Quantity | - | 1200 Sqmtr.     |
| b. Value    | - | Rs. 44,02,000/- |

### **iii. Approximate Power Requirement**

20 HP

### **iv. Pollution Control**

There is not mare pollution in this industry. However, there should be proper arrangement for exhaust in spray booth, drainage for used water from the unit. It is advisable to collect the used water in cement tank and there should be proper arrangement of removal of such water at regular interval.

v. **Energy Conservation**

This industry uses only electric power, sample precautions and knowledge of effective utilisation of electric power is therefore necessary.

**FINANCIAL ASPECTS :**

**Fixed Capital :**

**1. Land & Building :**

i.	Land - 300 m <sup>2</sup> - @Rs.463/ m <sup>2</sup> .	Rs.1,38,900/-
ii.	Building Workshop - 100 m <sup>2</sup> - @Rs.2999/m <sup>2</sup>	Rs.2,99,900/-
iii.	Office - 35 m <sup>2</sup> - @Rs.3888/m <sup>2</sup>	Rs1,36,080/-
	<b>TOTAL</b>	<b>: Rs.5,74,880 /-</b>

**Say Rs.5,75,000/-**

**2. Machinery & Equipments (Indigenous) :**

Sl. No.	Description	Qty.	Rate (Rs.)
i.	Automatic Beveling Machine	1No.	9,50,000/-
ii.	Surface Polishing Machine	1 No.	85,000/-
iii.	Bevel Polishing Machine	1 No.	12,000/-
iv.	Spray Gun with Air Compressor with 3HP Motor	2 Nos.	18,000/-
v.	Drilling Machine	1 set	8,000/-
vi.	Diamond Drilling Bits and High Carbon Drill Bits	6 Nos. & 12 Nos.	25,000/- ---
vii.	Diamond Cutters and Circular Cutter	5 Nos. & 1No.	10,000/- ---
viii	Wash Basin, Measuring Jars, Jelt Brushes and balance, Cost of Office Equipments, Working Tables, type-writers, etc.	LS	32,000
	<b>TOTAL</b>	<b>:</b>	<b>Rs.11,40,000/-</b>

	<b>Machinery Installation, Electrification Charges</b>	<b>LS</b>	<b>80,000/-</b>
		<b>TOTAL</b>	<b>Rs.12,20,000/-</b>
		:	-

3. Pre-operative Expenses (like project cost and other unforeseen expenses) : **Rs.80,000/-**

**Total Fixed Capital** :  
[ 1 + 2+3 ] = 5,75,000 + 12,20,000 + 80,000 =  
**Rs.18,75,000/-**

**WORKING CAPITAL (PM) :**

1. Personnel :

Sl. No.	Designation	No.	Salary (Rs.)	Total (Rs.)
i.	Manager	1	4,500/-	4,500/-
ii.	Accountant	1	3,000/-	3,000/-
iii.	Clerk-cum-Typist	1	2,800/-	2,800/-
iv.	Skilled Worker	2	2,200/-	4,400/-
v.	Semi-Skilled Worker	4	1,800/-	7,200/-
vi.	Un-Skilled Worker	3	1,750/-	5,250/-
vii.	Watchman	1	1,700/-	1,700/-
		<b>TOTAL</b>	:	<b>Rs.28,850/-</b>
		Perquisites @ 15% of salaries	:	4,328/-
		<b>TOTAL</b>	:	<b>Rs.33,178/-</b>

2. Raw Material (Per Month) :

Sl. No.	Particulars	Qty.(m <sup>2</sup> )	Rate (Rs.)	Value (Rs.)
i.	Glass Sheet 2mm	300	110/-	33,000/-
ii.	Glass Sheet 3mm	300	154/-	46,200/-
iii.	Glass Sheet 4mm	200	209/-	41,800/-
iv.	Glass Sheet 5.5mm	200	286/-	57,200/-
v.	Chemical Paints & Varnishes	---	L.S.	50,000/-
			<b>TOTAL :</b>	<b>Rs.2,28,800/-</b>

3. Utilities (PM) :

Power = (20 x 0.75) <sup>km</sup> x (Rs.2.80 x 8hrs. x 25Days)	Rs.8,400/-
Water = L.S.	Rs.600/-
<b>TOTAL :</b>	<b>Rs.9,000/-</b>

4. Other contingent expenses (PM) :

i.	Postage and Stationery	:	Rs.700/-
ii.	Telephone	:	Rs.700/-
iii.	Consumable Stores	:	Rs.800/-
iv.	Repair and Maintenance	:	Rs.1,900/-
v.	Advertisement & Publicity	:	Rs.1,400/-
vi.	Insurance	:	Rs.1,000/-
vii.	Packaging Materials	:	Rs.1,200/-
viii.	Sales Expenses	:	Rs.1,400/-
	<b>TOTAL</b>	<b>:</b>	<b>Rs.9,100/-</b>

**Say Rs.9,000/-**

5. Total Recurring Expenditure (PM) :

$$33,000 + 2,28,000 + 9,000 + 9,000 = \mathbf{Rs.2,79,000/-}$$

6. Total Recurring Expenditure for 3 Months :

$$\text{Sl.No. (5) } \times 3 = \mathbf{Rs.8,37,600/-}$$

**Total Capital Investment :**

i.	Fixed Capital	Rs.18,75,000/-
ii.	Working Capital	Rs.8,37,600/-
	<b>TOTAL :</b>	<b>Rs.27,12,600/-</b>

## FINANCIAL ANALYSIS :

### 1. Cost of Production [ PA ] :

a.	Total Recurring Expenditure (per year)	Rs.33,50,400/-
b.	Depreciation on Building @5% Rs.4,36,,000/-	Rs.21,800 /-
c.	Depreciation on Machinery and Equipments @10%	Rs.1,22 000/-
d.	Interest on Fixed Capital @14%	Rs.3,19,500/-
e.	Interest on Working Capital @20%	Rs.3,79,764 /-
	<b>TOTAL :</b>	<b>Rs.38,73,964/-</b>

say **Rs.38,74,000/**

### 2. Turn Over [ per year] :

Sl.No.	Particulars	Qty.(m <sup>2</sup> )	Rate (Rs.)	Value (Rs.)
i.	2mm Silvered Glass Mirror	3600	275/-	9,90,000/-
ii.	3mm Silvered Glass Mirror	3600	320/-	11,52,000/-
iii.	4mm Silvered Glass Mirror	2400	425/-	10,20,000/-/-
iv.	5.5mm Silvered Glass Mirror	2400	475/-	11,40,000/-
	<b>TOTAL :</b>			<b>Rs .44,02,000/-</b>

### 3. Net Profit per year :

$$\begin{array}{rcl} \text{Turn Over} & - & \text{Cost of Production} \\ \text{Rs. 44,02,000/-} & - & \text{Rs.38,74,000} & = & \text{Rs.5,28,000/-} \end{array}$$

### 4. Net Profit Ratio :

$$\frac{\text{Net Profit per year} \times 100}{\text{Turn over per year}} = \frac{5,28,000 \times 100}{27,12,000} = \mathbf{11.99\%}$$

**5. Rate of Return on Investment :**

$$\frac{\text{Net Profit per year} \times 100}{\text{Total Investment}} = \frac{5,28,000 \times 100}{27,12,000} = 9.46\%$$

**6. Break Even Point :**

**a. Fixed Cost :**

Depreciation on Building	:	Rs.21,800/-
Depreciation on Machine	:	Rs.1,22,000/-
Interest	:	Rs3,79,764/-
20% of Salary and Wages	:	Rs.79,200/-
40% of Other Contingent Expenses	:	Rs43,680/-
<b>TOTAL</b>	<b>:</b>	<b>Rs.6,24,644/-</b>

**Break Even Point :**

$$\frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Net profit}} = \frac{6,24,644 \times 100}{11,52,644} = 54.19\%$$

**Name and Address of Raw Material Suppliers :**

1. M/s. Haldyn Glass Limited, Western Express Highway, Jaycoach, Goregaon(E).
2. M/s. Carbon and Universal Limited, 53/53, Jahangir Street, Chennai.
3. M/s. Kilburn & Company, Mount Road, Chennai-2.
4. M/s. Triveni Sheet Glass Works Ltd., Iradatganj, Allahabad.
5. M/s. Hindustan Pilkington Glass Industries, Asansol, West Bengal.
6. M/s. Indo Asahi Glass & Co. Ltd., Bhurukunda, Hazaribagh.
7. M/s. Haryana Sheet Glass Ltd., F-24, Desh Bandhu Gupta Market, Surendra Mansion, Karol Bagh, New Delhi-5.
8. For Chemicals, any Chemical Dealer.



**Name and Address of Machinery and Equipments Suppliers :**

1. M/s. Bando Trading Co. Ltd., Tokushima 770, Japan (for Automatic Beveling Machine.), Model B-19.
2. M/s. Narang Glass & Frame Industries, 2/2/77 Ridge, Hyderabad-2.  
(for minor Beveling & Edge Cutting Machine small type)
3. M/s. Atliers Bottles Jemple Sursambar-Belgium. (for Automatic Beveling Machine, Bevel, Polishing Machine, Surface Polishing Machine)

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