

PROJECT PROFILE

Product : Bangle Manufacturing

Quality Standard : NIL

Month & Year : May 2010

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GLASS BANGLES

A. INTRODUCTION:

Glass Bangles are products made out of block glass of different shades of colors or directly from batch material. These are round in shape with pleasing colors and having designs over the surface. It is a customary for ladies to design wear bangles from their childhood for ornamental decoration and also as a symbol of sanctity. Glass bangles are also a sign of marital status for ladies in India, especially in Northern and Eastern region.

The trade names of the different size of the bangles are one Anna, Two four Anna, Two – Six Anna, Two – Eight Anna and three Anna representing different diameters. The glass bangles are sold out with the above names for indication sizes.

B. MARKET :

Glass bangles are the items of mass consumption throughout the country. The demand for the glass bangles generally goes up during the festive seasons and special functions, marriage occasions etc. IN spite of competition from plastic and other bangles, the demand for glass bangles is even increasing in view of established characterized customary and auspicious status gained by it in the society. Having very much fragile in nature, the glass bangles have very good replacement demand. This type of industry is only concentrated in Firozabad manufacturing glass bangles using pot furnace. This type of industry may be set up in other parts of the country also However, skilled labour, required for bangles coil of parison making may have to be brought from Firozabad. At these products have very good demand from ladies of lower and middle class families, there is good scope for setting up new units in this line of manufacture.

C. BASIS AND PRESUMPTION:

It has been taken into consideration that the unit will work on a single shift basis for 300 days in a year. Only the furnace will run for

three shifts and accordingly 3 firemen have been arranged for operating the furnace consciously. The process of joining, liquid gold, silver and other types of decorations have not been incorporated in the profile as these can be got done from other cottage unit on piece rate basis.

The industry involves the process of bangle coil making which require very high skilled worker and they work sometimes on hourly basis also. Hence, their wages have been kept very high as Rs. 8,000/- per month which is as per the Norms. It is presumed that in the first year the capacity utilization will be 65% increasing gradually in the subsequent years reaching to 85% in the 4th year and expected to be maintained at this in the following years. Interest rate on fixed and working capital has been taken as 18% on an average.

D. IMPLEMENTATION SCHEDULE:

1. Survey for collection of data in respect of demand, raw material, available of skilled labour and technology etc. – 1st.
2. Preparation of project report - 1st - 2nd.
3. Provisional registration 2nd - 3rd.
4. Selection of site 2nd – 3rd.
5. Arrangement of finance/loan.
6. Construction of Building & Workshop 3rd - 5th.
7. Construction of Furnace 5th – 7th.
8. Recruitment of staff & skill labour 7th – 8th.
9. Procurement of Raw material 8th – 9th.
10. Trial production 9th – 10th.
11. Actual production 11th onwards.

E. PROCESS OF MANUFACTURE:

Process outline: The process of manufacture of glass bangles is highly skilled labour oriented one comprising of the following main operations: -

1. Glass Melting
2. Parison Making
3. Bangle spiral / coil forming

The glass batch materials like sand, soda ash, lime stone felspar, borax etc with other additives and coloring materials in a suitable proportion are mixed thoroughly manually and fed into the pot places in pot

furnace. The raw material are melted in the furnace at a temperature of about 1300 – 1400 C to obtain molten glass.

The molten glass is drawn from the pot of the furnace with the help of the iron pipe and formed into job to gather required quantity of glass for formation into parison on iron plates. The parison of different colors are joined together and reheated in an auxiliary furnace to obtain required designs. The reheated parison is then transferred to Belar furnace from which the glass is further drawn into spiral/coil of bangles on the spindle counted and rotated manually at uniform rate of revaluation synchronizing with the manually at the other end of the furnace. The formation of spiral/coil on the spindle from the softened glass parison required a highly specialized skill and that is why, these workers are highest paid staff in the bangle factory. The diameter of the bangle spiral mainly depends upon the diameter of the spindle used in the formation of spirals and the thickness is controlled by exerting the requisite amount of pull on the softened glass parison required highly specialized skill in the bangle why, these workers are highest paid staff in the bangle factory. The diameter of the bangle spiral mainly depends upon the diameter of the spindle used in the formation of the spirals and the thickness is controlled by exerting the requisite amount of pull on the softened glass parison by spiral are maker (tarwalla) having highly skilled job. Spiral are then taken out from the spindle and cut with the help of a pencil cutter to separate out the single pieces of bangles from spiral. These cut or unjoined bangles are then sent for joining of end, finishing cutting & polishing, decoration etc. The finished products are then neatly packed or made into toras for sale.

F. INSPECTION AND QUALITY CONTROL:

There are standards/specification for glass bangles and hence these are to be made as per the consumer requirement and prevailing fashioning. But it is very essential to take suitable measures to maintain the quality in selection and mixing of the raw material, batch composition, melting of glass uniformity in sizes and shapes of end products and their durability. The bangle should be free from the small seeds, bubbles and minor defects which can be controlled by proper melting of glass. The durability of the glass is mainly dependent upon the composition of the batch and amount of seed & bubbles retained in the bangles.

Power required:

As all the operation are manual, the requirement of power is only for the lighting purpose having load of 5 kw.

Pollution control:

For the pollution control, it is proposed to install a chimney of 60 ft height for the glass melting pot furnace. The auxiliary furnaces also should have at least the hood types of arrangement on the top for exit of the gases. With installation of proper instrument like orsat

apparatus, optical pyrometers, better combustion results can be achieved and hence minimizing the pollution.

Vacuum cleaner and dust collectors are also proposed to minimize the dust pollution at the place of batch preparation.

Energy Conservation:-

The furnace should be constructed heat efficient as far as possible by selecting proper types of refractors of good quality. For measurement of temperature, optical pyrometer may be used which will help in maintaining the required degree of temp and not losing the heat by keeping higher temp of the furnace which is possible if it is maintained only just with eye and experience.

The better combustion of the fuel can be achieved if the requisite quantity of excess air is fed into the furnace which can be controlled with the help of the results obtained from orsat apparatus. The percentage of CO_2 , CO and O_2 are the indication of complete or incomplete combustion. It also indicates whether the excess air quantity is more or less. More excess air also cools the furnace which in turn requiring more heat energy to maintain the same degree of temperatures.

G. PRODUCTION CAPACITY PER ANNUM:

Glass Bangles of various sizes 3,40,000 toras @ Rs. 46 per tora Rs. 1,56,40,000/-

F. FINANCIAL ASPECTS:

1. FIXED CAPITAL:

(a) Land & Building:		Rs.
S.N.	DESCRIPTION	AMOUNT
01.	Boundary Walls L.S.	8 0,000
02.	Building	750,000
03.	Lnad _ 40000 Sq. mets. @ Rs.100/- per Met	400,00
04.	Workshed _ 500 Sq.m @ Rs.1200/-	600,000

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Total 1,830,000

(b) Machinery and Equipment:

S.N.	DESCRIPTION	QTY	RATE	Rs. AMOUNT
1.	Auxiliary furnace for reheating	2	25,000	50,000
2.	Belane furnaces	5	15,000	75,000
3.	Direct cokal fixed pot furnace with 12 pots each having capacity of 400 With 60 ft height of chimney	1	5,00,000	5,00,000
4.	Dust Collector	1	40,000	40,000
5.	Office Furniture & Equipments	1	40,000	40,000
6.	Optical pyrometer	1	20,000	20,000
7.	Orasaat appratus	1	20,000	20,000
8.	Vacume cleaner			8000
9.	Tools, Dies & Equipments			20,000
10.	Installation & Electrification			70,500

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Total 815,500
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2. WORKING CAPITAL PER MONTH:

(a) Row material Per Month:

S.N.	DESCRIPTION	QTY	RATE	AMOUNT
1.	Borax	1	20,0000	20,000
2.	Cullet (Broken Glass)	10	1,200	12,000
3.	Fire Clay pots			26,000
4.	Lime Stone	2.5	1000	2,5000
5.	Other minor Chemical			14,450
6.	Packing Material			14,300
7.	Potassium Nitrates	1.5	15,000	22,500
8.	Silica Sand	40	500	20,000
9.	Soda Ash	16	8,000	128,000

Total 259,750

(b) Salaries & Wages Per Month:

S.N.	DESCRIPTION	QTY	RATE	Rs. AMOUNT
1.	Accountant	1	2,200	2,200
2.	Clerks	2	1,500	3,000
3.	Foreman	3	2,200	6,600
4.	Foreman	1	2,500	2,500
5.	Manager cum Glass Technologist	1	5,000	5,000
6.	Semi Skilled Workers	40	1,500	60,000
7.	Skilled Worker	20	2,000	40,000
8.	Special Skilled Workers	5	8,000	40,000
9.	Sweeper	1	1,000	1,000
10.	Unskilled Worker	40	1,000	40,000
11.	Watchman	3	1,200	3,600
Total				203,900
Perquisites 15%				30,585
Total				234,485

(c). Utilities per Month:

S.N.	DESCRIPTION	QTY	RATE	Rs. AMOUNT
1.	Cost of Joining, Planing and Stringing of bangles approximately roar of bangles	5	30,000	150,000
2.	Electricity 750 KWH	2.5	750	1,875
3.	Steam Coal 180 ton	2000	180	360,000
4.	Water			1,500
Total				513,375

(d) Other expenses per Month:

S.N.	DESCRIPTION	Rs. AMOUNT
1.	Advertisement and publicity	2,000
2.	Postage and Stationery	15,000
3.	Repair and Maintenance	1,500
4.	Replacement of pots	5000
5.	Telephone	2,000
6.	Transport charges	10,000

Total	35,500
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WORKING CAPITAL PER MONTH: 259,750 + 234,485 + 513,375 +
35,500 = Rs. 1,043,110

(e) WORKING CAPITAL FOR 3 MONTHS = 1,043,110 * 3 = 3, 129,330

(f) TOTAL CAPITAL INVESTMENT:

Rs.

FIXED CAPITAL

2,645,500

WORKING CAPITAL FOR 3 MONTHS

3,129,330

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TOTAL

5,774,830

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(g) Cost of Production per Annum:

Rs.

S.N. DESCRIPTION

AMOUNT

1. Depreciation on Machinery and Equipment @ 10%

70,500

2. Depreciation on office Furniture @ 20%

4,000

3. Depreciation on Tools @ 25 %

5,000

4. Recurring expenditure

12,517,320

5 Interest on capital investment @ 18 %

1,039, 469

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Total

13,636,289

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(h) SALES PER ANNUM :

Glass Bangles of various sizes 3,40,000 toras @ Rs. 46 per tora Rs.
1,56,40,000 / -

(i) Profit Per annum:

Rs.

Sales per annum

15,640,000

Cost of Production per annum

13,636,289

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PROFIT

2,003,711

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(J) Profitability Analysis:

(a) % of profit on sales

$$= \frac{\text{profit / annum} * 100}{\text{Sales / annum}}$$

$$= \frac{2,003,711 * 1000}{15,640,000}$$

$$= 12.81 \%$$

(b) % of profit on investment

$$= \frac{\text{profit / annum} * 100}{\text{Total Capital investment}}$$

$$= \frac{2,003,711 * 1000}{5774830}$$

$$= 34.7\%$$

(c) Break Even Point :

(1) Fixed cost per annum:	Rs.
Depreciation	79,500
Interest on Investment	1,039,469
40% of salary and wages	1,125,528
40% of other expenses & Utilities	2,634,600
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Total	4,879,097
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(2) Profit per annum = Rs. 2003711

$$\begin{aligned} \text{Break Even Point} &= \frac{\text{Fixed Cost / annum} * 100}{\text{Fixed cost/ annum} + \text{profit/ annum}} \\ &= \frac{4,879,097 * 100}{4,879,097 + 2,003,711} \\ &= 70.89 \% \end{aligned}$$

(k) List of Supplier's of Raw Materials :

01. M/s. Raj kamal Silica Works,
P.O. Shankargarh,
Dist. Allahabad (U.P.)

02. M/s Silica Minerals,
28, Bulleon Associations Bldg.
Haldiya Rasta, Jaipur.

03. M/s Tata Chemicals Ltd.
Mithapur, Gujrat.

(1) List of Supplier's of Machinery & Equipments:

01. M/s /Emhart India Ltd.,
3-19, Gorwa Industrial Estate, Vadodra (Gujrat).

02. M/s Blurn & co.,
No 12, Mission Road, Calcutta.

03. M/s Borax Morarji Ltd.
Mahatma Gandhi Road,
Ambernath Dist., Thane, Maharashtra.

04. M/s Carborandum Universal Ltd.,
11/12, North Beach Road, Madras.

05. M/s General Glass Machinery (p) Ltd.,
F-18, Shanti kunj, Sadhet Vasvani Road, Pune-I

06. M/s Glass Equipment (India) Ltd.,
Bkahadurgah (Haryana).

07. M/s. Sahlt Chemicals Works,
Sahupuri, Varanasi (U.P.).

08. M/s Swahney Chemical Machines,
2nd Floor, Pratap House, Daryaganj, Delhi – 110 006.

09. M/s Silicon Traders,
No. 115, Sobalia Bagh, Allahabad – 3.

10. M/s Toshniwal Bros. Pvt Ltd.,
3E/8, Jhandealan Extn, New Delhi.

11. M/s Mohan Diralta & Associates,
Belanganj, Agra.