Crockery Stone Ware

PRODUCT CODE	:	94389, 94330 and 94341
QUALITY AND STANDARDS	:	IS 11475:1985 Stoneware Dinner ware IS 2838:1984 Stoneware containers for general purpose
PRODUCTION CAPACITY	:	Qty. : 600 M.T. (per annum) Value : Rs. 91,20,000
MONTH AND YEAR OF PREPARATION	:	March, 2003
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Introduction

Crockery ware are being manufactured in earthenware, stoneware, vitreous china and bone china. This project profile is prepared for the manufacture of tableware, which comprises crockery items and some other articles made of stoneware. Under the group of tableware cups, saucers, plates, bowls, tea sets, dinner, sets jars, barnels etc. are covered. They are impermeable to most of the liquids and water absorption is less than 0.5%. Ceramic crockery ware have their own place in the field of kitchenware due to their outstanding properties over melamine and stainless steel wares, as these are more hygienic, easily cleanable, heat resistant etc. The main uses of these items are in houses, railway, defence, canteens, restaurants, hotels etc.

Market Potential

Stoneware tableware and other items are used in houses, hotels, restaurants, tea stalls, railway canteens, defence canteens etc. The installed capacity of the industry located mostly in the Northern parts of the country is estimated around 1,40,000 M.T per annum. However, in the southern region, production of these product is less than the demand. On the national level demand of the product is greater than the supply. This product has good scope in international markets, mainly in Gulf and South African Countries. It is estimated that demand of this item is increasing steadily at the rate of 10% per annum. The demand which was subdued in the past 3-4 years due to the use of substitute items made of melamine and steel have again shifted

to ceramic crockery. There is a good scope for encouraging new units in this line of activity especially in the southern part of the country.

Basis and Presumptions

Efficiency and working hours considered for full capacity utilization:

(a) 80% efficiency.

(b) 8 working hours per day and 300 days in a year.

(c) Wages are taken as per the prevailing norms.

(d) Interest is taken @ 14% annum.

It is expected that the project can be implemented within one-year from the project report stage.

Technical Aspects

Process of Manufacture

The raw materials like quartz, felspar, ball clay, fire clay etc. are charged in ball mill in desired proportion with 30-40% water and ground to the fineness of 100-120 No. mesh. China clay and other plastic clays which are white burning are blunged in blunger with 30-40% water. The slurry from ball mill and blunger is mixed and passed through fine mesh and electromagnet in order to remove the iron particles from the slurry. It is mixed properly in agitator tank from where it is passed through filter press for dewatering to make filter cakes. These cakes are fed into de-airing pug mill to extrude the compact body. While the round shaped articles are made by this body on Jigger and Jolly, other shapes are made by slip casting process. For casting, slip is made and poured into the moulds of plaster of paris. The articles are finished, glazed, and fired at the temperature of 1250-1280°C. Tunnel Kiln is proposed for firing in this project profile. Use of D.D Kilns and shuttle Kilns is also in practice but not economical. The articles taken out from the kiln are sorted and packed for selling.

Quality Control and Standards

The Bureau of Indian Standards has formulated and published IS 11475:1985 Stoneware Dinnerware for carrying out various tests and control of the quality of the product.

Production capacity (per annum)

Quantity : 600 M.T.

Value : Rs. 91, 20, 000.

Motive Power 75 HP.

Pollution Control

For the purpose of pollution control, it is advisable to provide dust collecting system and necessary retrofitting with the kiln to reduce waste gas pollution. The unit may seek NOC from the concerned authority.

Energy Conservation

Crockery stoneware industry needs energy conservation in fuel as well as electricity. Ceramic fiber lined tunnel Kiln is proposed in the project profile which conserves around 30-35% fuel when compared with conventional DD Kiln.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building	(Rs.)
Land 3000 Sq. m.@ Rs. 200 Sq.m	6,00,000
Building	
Machinery shed 300 Sq. m Rs. 2000 Sq. m	6,00,000
Kiln shed 150 Sq. m.@ Rs. 2,000	3,00,000
Raw materials Materials shed 100 Sq. M.@ Rs. 2000 Sq.m	2,00,000
Finished goods godown 100 Sq. m. @ Rs. 2000 Sq. m	2,00,000
Office 60 Sq. m. @ Rs. 2500 Sq. m	1,50,000
Boundary walls etc. LS	1,50,000
Total	22,00,000

(ii) Machinery and Equipments

Production Unit Description	Ind./ Imp	Qty.	Price (Rs.)
Ball Mills size 1800 x 1800 mm, with all accessories and 10 HP Motor each	Ind.	2	3,70,000
Ball Mills size 900 x 900 mm, with all accessories and 7.5 HP Motor	Ind.	1	70,000
Screw blunger, capacity 5000 Litre with 5 HP Motor and cemented Tank	Ind.	2	1,50,000
Vibrating screen size 900 mm x 900mm With all accessories and 1 HP Motor	Ind.	2	60,000
Electromagnet with rectifier etc.	Ind.	1	25,000
Agitator with 3 HP Motor and Cemented Tank	Ind.	1	50,000
Diaphragm pump, storke 225 mm suction 7.5 mm with 7.5 HP Motor	Ind.	1	75,000
Filter press chamber dia 600 mm number of plates 50 No.	Ind.	1	1,50,000
De-airing pugmill with vacuum pump etc. with 5 HP Motor	Ind.	1	2,00,000
Disintegrator size 550 cm with all accessories and 7.5 HP Motor	Ind.	1	75,000
Jigger and Jolly with 5 HP Electric Motor	Ind.	15	75,000
Sagger Press Power operated with 5 HP Motor	Ind.	1	60,000
Water Pump set with 2 HP Motor	Ind.	1	20,000
Pot Mill, Pot No. 6 Pot size 9" x 10" with Electric Motor of 2 HP	Ind.	1	20,000
	Total		14,00,000
Electrification and installation charges @ 10% on cost of machinery			1,40,000
Testing equipments			1,00,000
Misc. tools, Racks, Trolleys etc.			85,000
Cost of office equipments			75,000
	Total		18,00,000

Kilns	(Rs.)
Ceramic fibre lined push bat tunnel Kiln with control system oil storage tank, combustion fan, hydraulic pusher and other equipments Specifications	27,00,000
Length	24000 mm
Setting width	900 mm
No. of Burners	4 Nos.
Power required for auxiliary equipment	10 HP
Capacity	2 MT per day (Crockery ware)

(iii) Pre-operative Expenses	Rs. 3,00,000
Total fixed capital (i+ii+iii)	70,00,000

B. Working Capital (Per Month)

(i) Personnel (per month)

Designation	Nos.	Salary (Rs.)	Total (Rs.)
Manager-cum-ceramist	1	8,000	8,000
Supervisors	2	4,000	8,000
Skilled workers	15	2,000	30,000
Semi-skilled workers	15	1,500	22,500
Fitter	1	2,000	2,000
Electrician	1	2,000	2,000
Accountant	1	4,000	4,000
Clerk-cum-Typists	2	2,500	5,000
Peon	1	1,500	1,500
Watchman	2	1,500	3,000
	Total		86,000
Perquisites @ 15% of total Salary			12,900
	Total		98,900
	or Say		99,000

(ii) Raw Materials (per month)

Items	Ind/ Imp	Qty	Rate (Rs.)	Total (Rs.)
Quartz/Silica Sand	Ind.	13 MT	700/MT	9,100
Felspar	Ind.	10 MT	750/MT	7,500
China clay	Ind.	10 MT	2000/MT	20,000
Ball Clay	Ind.	5 MT	1000/MT	5,000
Fire Clay	Ind.	20 MT	600/MT	12,000
Marble/Calcite	Ind.	750Kg	2000/MT	1,500
Zinc Oxide	Ind.	50/Kg.	50/Kg.	2,500
Zirconium opacifier	Ind.	250 Kg.	40/Kg.	10,000
Barium Carbonate	Ind.	75 Kg.	30/Kg.	2,250
Colouring agents	Ind.	LS		5,000
Plaster Paris	Ind.	2MT	2000 MT	4,000
L.D.O (Fuel)	Ind.	10KL	14,000	1,40,000
Kiln furniture	Ind.	LS		6,000
Packing materials	Ind.	LS		5,000
			Total	2,29,850
			or Say	2,30,000

(iii) Utilities (per month)

Power charges 62 kW.	Rs. 40,000

(iv) Other Contingent Expenses (per month)	(Rs.)
Postage and Stationery	2,000
Telephone	3,000
Consumable stores	5,000
Repair and maintenance	5,000
Transport Charges	5,000
Advertisement and publicity	3,000
Insurance etc.	4,000
Misc. expenses	4,000
Total	31,000

(v) Total Recurring Expenses (per month)	(Rs.)
Personnel (wages)	99,000
Raw materials	2,30,000
Utilities	40,000
Other contingent expenses	31,000
Total (L.S.)	4,00,000

(vi) Total Working Capital for 3 months	12,00,000

C. Total Capital Investment

1. Fixed	Rs. 70,00,000
2. Working capital (3 months)	Rs. 12,00,000
Total	Rs. 82,00,000

Machinery Utilization (on the basis of 24 hours working)	
Ball Mills	100%
Screw blunger	100%
Filter press	80%
Jigger Jolly	80%
Tunnel Kiln	80%

FINANCIAL ANALYSIS

(1) Cost of Production (per annum)	(Rs.)
Total recurring expenditure	48,00,000
Depreciation on building @ 5%	80,000

Cost of Production (per annum)	(Rs.)
Depreciation on machinery and Equipments @ 10%	1,80,000
Depreciation on kiln @ 20%	5,40,000
Interest on total capital investment @ 14%	11,48,000
Total	67,48,000

(2) Turnover (per year)			
Items	Qty	Rate (Rs.)	Value (Rs.)
Stoneware Crockery items	600 MT	16,000 MT	96,00,000
Deducted 5% towards rejection			4,80,000
Total			91,20,000

(3) Net Profit (per year)

= Rs. 91,20,000–67,48,000

= Rs. 23,72,000

(4) Net Profit Ratio

$$= \frac{\text{Net profit per year x 100}}{\text{Turnover per year}}$$

$$= \frac{23,72,000 \text{x } 100}{91,20,000}$$

= 26%

(5) Rate of Return

$$= \frac{\text{Net profit per year x 100}}{\text{Total investment}}$$

$$= \frac{23,72,000 \text{x} 100}{82,00,000}$$

= 28.93%

(6) Break-even Point	
Fixed Cost	(Rs.)
Depreciation on Building and equipment and Kiln	8,00,000
Interest on total investment	11,48,000
40% of other contingent expenses	1,29,600
40% of salary and wages	4,75,200
Insurance	48,000

Total 26,00,800

B.E.P.

$$= \frac{\text{Fixed cost x 100}}{\text{Fixed cost + profit}}$$

$$= \frac{26,00,800 \times 100}{26,00,800 + 23,72,000}$$

= 52.3%

Addresses of Machinery Suppliers

1. M/s. Amic Industries Pvt. Ltd.
   80-D, Dr.Suresh Sircar Road,
   Kolkata-700014.
2. M/s. Modern Engg. and Fabricating Works
   Behind Kubeshwar Mahadev,
   Saijpur (Ambavadi),
   Naroda Road,
   Ahmedabad-380016.
3. M/s. Lokmanya Engg. Works
   20, Bharat Khand Cotton Mills Compound, Naroda Road,
   Ahmedabad-380016.
4. M/s Keshab Machineries Pvt. Ltd.
   Bose Park, P.O. Sukeher,
   24, Parganas Dt.,
   West Bengal
5. M/s. Hindustan Company
   123/7, Gopallal Tagore Road,
   Bon Hoogly,
   Kolkata-700035.
6. M/s. D.K Engg. Works,
   8, Panchanathala New Road,
   Balgharia,
   Kolkata -700056.

Tunnel Kiln/Khuttle Kiln Suppliers

1. M/s. Bengal Lion (Industrial Furnace) Ltd.
   27-B Camac Street,
   Kolkata
2. M/s. Teksago-Bhagat Carakiln Pvt. Ltd.
   D-828, New Friends Colony,
   New Delhi-110005.
3. M/s. Sharma Kiln Technology Pvt. Ltd.
   206, Hare Krishna Complex,
   Opp. Kothawala Flat,
   Ashram Road,
   Ahmedabad.
4. M/s. N.M Ceramic Kiln.
   Post Box No. 30, B-8 Ram Balram Apartment,
   Kalol- 382721 (Gujarat)
5. M/s. Neptune Group Companies
   252, GIDC Ind. Estate,
   Phase II,
   Modhera Road, Dediasan,
   Mehasana-384002.

Raw Material Suppliers

1. M/s. Golachar pallwad and Co.
   Opp. Railway Station,
   Gandhi Nagar,
   Ajmer Road, Beawar,
   (Rajasthan)
2. M/s. Jotya Prakash Mining Works
   4, Gupta Gali Beawar,
   (Rajasthan)
3. M/s. Satya Prakash Minining Works.
   2, Gupta Gali, Beawar 305901
   (Rajasthan)
4. M/s. Ashwain and Co.
   Arsodia, Taluka-Idar,
   Pin 383430.
5. M/s. Hindustan China Clay Works
   Papinacheri,
   (Kerala)
6. M/s. Tahala Ram and Sons

Rathkhan,
Bikaner (Rajasthan)

7. M/s. Multani Minerals
Statopm Road,
Thangadh (Gujarat)

8. M/s. Ceramills Glaze and
Ziroonium Co.
Daultabad Road,
Gurgaon, (Haryana)

9. M/s. Hemvathi Nandan Nitrates
(P) Ltd.
61-A, Industrial Development
Area, Chemical Zone,
Phase II, Mallapur, Nacharam,
Hyderabad (A.P.)

10. M/s.Shahzips (P) Ltd.
55, Industrial Estates,
Nunhai, Agra.

11. M/s. Ferro Coatings and Colours Ltd.
Post Koka, 24 Parganas,
Kolkata (W.B).

12. M/s. Rajasthan Plasters and
Industries
Out side Coga Gate,
Bikaner (Rajasthan)

13. M/s. Snow-White Industries
40, Manendra Nagar, Rishikesh,
Dehra Dun (Uttaranchal)