

Full PVC Footwear

PRODUCT CODE	: 301201005
QUALITY AND STANDARDS	: (1) PVC Sandals IS 2167:1972 (2) PVC Industrial Boots IS 12254:1993
PRODUCTION CAPACITY	: Quantity: 75,000 Pairs Value: RS. 41,25,000
MONTH AND YEAR OF PREPARATION	: January, 2003
PREPARED BY	: Small Industries Service Institute, Kanjani Road, Ayyanthole, Thrissur-680003 (Kerala)

INTRODUCTION

Full PVC Footwear such as Chappal, Sandals and Shoes are popular in Indian Market due to their cheap prices, durability and easy maintenance and affordability by a common man. Used PVC footwear containing basic raw-material i.e. PVC can again be used for making cheaper types of footwear. The plant and machinery and raw materials are available indigenously. The PVC Footwears are generally light weight and very comfortable to wear in rainy seasons.

MARKET POTENTIAL

PVC Footwears were introduced in 1964 and it gained momentum in 1967. Initially, plants and moulds were being imported generally of multisation type. Although the capacity creation was restricted due to shortage of raw-material, additional capacity continued

to be created with indigenously available two-station machinery and moulds. The capacity at present is estimated 300 million pair per annum. There is scope for setting up these units in rural and backward areas using PVC granules in combination units PVC Scrap materials.

BASIS AND PRESUMPTIONS

It is proposed to manufacture 250 pairs per day on single shift basis of 8 hours duration and 25 working days in a month.

The project may take 3 year to achieve full capacity utilisation depending on various factors.

Labour charges has been given on per month basis including 15% of perquisites for 25 working days.

The rate of interest for both fixed and working capital is assumed at 18% per year.

The entrepreneur is expected to raise 20 to 25% of the capital as margin money.

The operative period of the project may be given 10 to 15 years considering obsolescence of technology.

The loan may be paid back within 10 years.

IMPLEMENTATION SCHEDULE

It is assumed that the rented building is available in the area of implementation of the Scheme for the entrepreneur. Considering the remaining activities, a tentative schedule of implementation is given below:

<i>Sl. No.</i>	<i>Activity</i>	<i>Duration (in Week)</i>
1.	Arrangement of Finance	1st to 8th
2.	Arrangement of Electric Supply	8th to 30th
3.	Procurement of Machinery	15th to 30th
4.	Selection of personnel	20th to 30th
5.	Installation of Machinery	30th to 38th
6.	Trial Production	39th to 40th
7.	Commencement of Commercial Production	40th

The unit is expected to start commercial production from 40th week onwards.

TECHNICAL ASPECTS

Process of Manufacture

As per the design of the sample, PVC Footwear to be manufactured, the moulds are obtained and fitted in the machine. Then the PVC compound is fed according to requirement into a

heated cylinder from sopper either in strip, granular or powder form. Ceramular form is more common. The Injection Cycle starts with closing and locking of the moulds under pressure either applied by hand or mechanical levers or automatically by hydraulic or pneumatic power. When PVC in the cylinder is sufficiently softened by heat, the same is forced forward by ram or screw action through an intermediate channel known as 'SPRUE' into the mould until it has cooled down to a state of sufficient rigidity and the pressure in the mould relaxed. The time cycle, therefore, can be adjusted into several stages, namely, mould filling time, dwell time under pressure, cooling time and mould opening time. The cooling time usually is the longest of all and has to be cut especially in small machine and the same has been recommended in the project.

PVC compounds are available as natural/transparent granules. Prior to use, colour concentrate granules known as master batches are mixed with the natural PVC Compound in the required proportion to give the desired colour. Initial mixing can be done in any convenient container units, a scoop or small shovel. The final mixing is automatically achieved in the cylinder of the moulding machine.

The PVC compound, suitably mixed with the master batch is fed into the sopper of the machine. Normally 10 to 12 kg. PVC compound are fed at a time. Shore hardness of 70 to 78 for PVC granules temperature of 160°C and pressure of 80 lbs/square inch gives satisfactory results.

The main operations are:

1. Feeding of PVC granules into the sopper

2. Trimming of surplus materials
3. Cleaning and spraying (if required)
4. Fixing of fittings
5. Checking and Packing.

Quality Control and Standards

Following specifications are followed to customer's requirements:

- 1) PVC Sandals IS 2167:1972
- 2) Polyvinyl Chloride Resins Method of text IS 4669:1968.

Production Capacity

Quantity : 75,000 pair

Value : Rs. 41,25,000.

Motive Power 2 KW.

Pollution Control

There is no pollution in the manufacturing of PVC Footwear.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building

i) Land	500 Sq.Mtr.
ii) Built-up area	400 sq.mtr.
Rented per month	Rs. 6,000

(ii) Machinery and Equipments

Sl. No.	Description	IMP./ Ind.	Qty. Nos.	Value (Rs.)
1.	Six Station PVC Injection Moulding Machine fully automatic Rotary Type	Ind.	1	8,00,000
2.	Cost of Moulds 4 Sets each consists of four sizes sandal and shoes		1	1,60,000

Sl. No.	Description	Imp./ Ind.	Qty. Nos.	Value (Rs.)
3.	Tools and Equipments/ Jigs and Fixtures			30,000
4.	Cost of Office Equipments, Working Table, Racks, Trollies, Stools etc.			60,000
5.	Electrification and installation charges @ 10% cost of machinery			90,000
	Total			11,40,000
	(iii) Pre-operative Expenses			60,000
	Total			12,00,000

B. Working Capital (per month)

(i) Personnel (per month)

Sl. No.	Designation	No.	Salary (Rs.)	Total (Rs.)
1.	Manager	1	4,000	4,000
2.	Engineer Mechanical/Electrical	1	4,000	4,000
3.	Designer	1	3,000	3,000
4.	Supervisor	1	2,500	5,000
5.	Accountant/Cashier	1	2,500	25,000
6.	Clerk-cum-typist	1	2,000	2,000
7.	Chowkidar	1	1,500	1,500
8.	Skilled Workers	3	2,000	6,000
9.	Un-skilled Workers	6	1,500	9,000
	Total			37,000
	15% Perquisites on Total Salary			5,550
	Total			42,550
	Say			42,500

(ii) Raw Material (per month)

Sl. No.	Description	Qty.	Rate (Rs.)	Value (Rs.)
1.	PVC Granules	2,800 kg	50/kg	1,40,000
2.	Master Batch (Colour)	55/kg.	60/kg	3,300

Sl. No.	Description	Qty.	Rate (Rs.)	Value (Rs.)
3.	Fittings, Buckles, Button and Lacer etc.	6250 pairs	3/kg	18,750
4.	Packing Materials	6,250 pairs	2/pair	12,500
	Total			1,74,550
	Say			1,74,500

(iii) Utilities (per month)		(Rs.)
i)	Power 2,500 kWh	3,750
ii)	Water	250
	Total	4,000

(iv) Other Contingent Expenses (per month)

Sl. No	Description	Value (Rs.)
1.	Rent	6,000
2.	Repair and Maintenance	1,000
3.	Postage and Stationery	3,000
4.	Travelling Expenses	2,000
5.	Consumable Stores	1,500
6.	Advertisement and Publicity	2,000
7.	Insurance	500
8.	Sales Expenses	2,500
9.	Misc. Expenses	1,500
	Total	20,000

(v) Total Working Capital (per month)

Sl. No	Description	Amount (Rs.)
1.	Personnel	42,500
2.	Raw Material	1,74,500
3.	Utilities	4,000
4.	Other Contingent Expenses	20,000
	Total	2,41,000

(vi) Total Working Capital (for 3 months) Rs. 7,23,000

C. Total Capital Investment

Sl. No	Description	Amount (Rs.)
1.	Fixed Cost	12,00,000
2.	Working Capital for 3 months	7,23,000
	Total	19,23,000

MACHINERY UTILISATION 70% - 80%

FINANCIAL ANALYSIS

(1) Cost of Production (per annum)

Sl. Description No.	Amount (Rs.)
1. Total Recurring Expenditure	28,92,000
2. Depreciation on Machinery @ 10%	90,000
3. Depreciation on Tools-dies @ 25%	47,500
4. Depreciation on Furniture @20%	12,000
5. Interest on Total Investment @ 18%	3,46,100
Total	33,87,600

(2) Turnover (per annum)

Sl. Item No	Qty.	Rate (Rs.)	Value (Rs.)
1. PVC Shoes and Sandals	75,000 pairs	55/pair	41,25,000

(3) Net Profit (per annum)

$$\begin{aligned}
 &= \text{Total Turnover} - \text{Cost of Production} \\
 &= \text{Rs. } 41,25,000 - 33,87,600 \\
 &= \text{Rs. } 7,37,400
 \end{aligned}$$

(4) Net Profit Ratio

$$\begin{aligned}
 &= \frac{\text{Net Profit} \times 100}{\text{Turnover per annum}} \\
 &= \frac{7,37,400 \times 100}{41,25,000} \\
 &= 17\%
 \end{aligned}$$

(5) Rate of Return on Total Capital Investment

$$\begin{aligned}
 &= \frac{\text{Net Profit} \times 100}{\text{Total Capital Investment}} \\
 &= \frac{7,37,400 \times 100}{19,23,000} \\
 &= 38\%
 \end{aligned}$$

(6) Break-even Point

Fixed Cost (per annum)

Sl. Description No	Amount (Rs.)
1. Depreciation on Machinery and Equipments	90,000
2. Depreciation on tools, dies and equipments	47,500

Sl. No	Description	Amount (Rs.)
3.	Depreciation on Furniture	12,000
4.	Interest on total Investment	3,46,100
5.	40% of Salary Wages	2,04,000
6.	40% of other Contingent expenses (excluding rent)	67,200
7.	Rent	72,000
	Total	8,38,800

B.E.P.

$$\begin{aligned}
 &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}} \\
 &= \frac{8,38,800 \times 100}{8,38,800 + 7,37,400} \\
 &= \frac{8,38,800 \times 100}{15,76,200} \\
 &= 53\%
 \end{aligned}$$

Addresses of Machinery and Equipment Suppliers

1. M/s. Indian Hydraulic Industries, 70, Najafgarh Road, New Delhi – 15
2. M/s. J.K Traders & Engineering, Industrial Area, Kirti Nagar, New Delhi – 15
3. M/s. Ambika Dies and Moulds B-217, Naraina Industrial Area, Phase-1, New Delhi – 28

4. M/s. National Engineering Works New Nagapada Road, Mumbai-8
5. M/s. R.H. Windser India Ltd., E-7, U. Road, Thana Indl. Estate, Mumbai.

Raw Material Suppliers

1. M/s. Pioneer Plastic Industries, Industrial Estate, Okhla, New Delhi – 20
2. M/s. National Organic Chemical Industries Ltd. Worli, Mumbai – 18
3. M/s. Calico Plastic and Chemicals Anik Chamber, Mumbai – 400 074
4. M/s. Chemicals and Plastic, Mettur, Tamil Nadu
5. M/s. Kundatia Industries, No. 69, Najafgarh Road, New Delhi.
6. M/s. Omega Polymicrons Pvt. Ltd. Meerut Road, Mawana- 250401 Meerut (U.P.)