

# **FULL PVC FOOTWEAR**

## **1. 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 Foot wears are generally light weight and very comfortable to wear in rainy seasons.

## **2. PRODUCT & ITS APPLICATION:**

PVC Foot wears were introduced in 1964 and it gained momentum in 1967. Initially, plants and moulds were being imported generally of multi station 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.

## **3. DESIRED QUALIFICATIONS FOR PROMOTER:**

Graduate in any graduate.

## **4. INDUSTRY LOOK OUT AND TRENDS**

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## **5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:**

Footwear market is estimated at 550 million pairs, of which 450 million pairs are in the form of casual footwear, such India's total as ethnic footwear, rubber and leather slippers, sandals etc., but not boots and shoes. Leather footwear has a sizeable share, and production is estimated to be at 200 million pairs, including for exports. The footwear market is expected to grow at 8-10%, based on recent trends. In value terms, the sector represents a market of US\$ 2.17 billion, of which exports account for approximately 35% .Global Footwear Market is expected to garner \$371.8 billion by 2020, registering a CAGR of 5.5% during the forecast period 2015 - 2020. Footwear industry is growing at a steady pace since the past few years. Analysis of the report includes various types of footwear including athletic and non-athletic shoes used by individuals of all age groups and gender. The rising demand for fancy, trendy yet comfortable footwear among all age groups is a key factor driving the global footwear industry. The global footwear market is segmented by type of footwear, end users of footwear, various platforms for sale of footwear, material used, and their sales across various geographies. Asian countries, such as China and India are major exporters of leather footwear across developed countries (UK and US).

Market players are also focusing on expanding their sales channels through different web portals across various regions. On line platforms for purchase of footwear are gaining steady popularity among teenagers and youths, thereby occupying a significant share among all distribution channels. Presently,

manufacturers are focusing on developing and innovating new products, to maintain their market positions.

## **6. RAW MATERIAL REQUIREMENTS:**

Polyvinyl Chloride (PVC) is one of the most widely used plastics. It is produced by polymerizing vinyl chloride monomers. It has an amorphous structure with polar chlorine atoms and possesses fire retarding properties, durability, and oil/chemical resistance. It is added with modifiers to modify its properties according to the end user demand in the polyvinyl chloride market. Various properties like abrasion resistance, light weight, good mechanical strength, and toughness enable its wide use in construction, automotive, packaging, and the electrical industries. It is widely employed for manufacturing pipes, fittings, profiles, tubes, films, sheets, wires, cables, bottles, and foot wears.

PVC demand in India grew from 1131 KTA in 2006 to 1980 KTA in 2012, at a CAGR of 9.8%. Production capacity increased at an annual compounded growth rate of just 4%, from 1085 KTPA in 2006 to 1370 KTPA in 2012. Production has lagged demand in the Indian PVC market and India imports about 42-43% of PVC consumed annually. India imported about 750-1000 KT of PVC during the last two years and the share of imports in total consumption is expected to exceed 50% in the next five years.

Five companies- RIL, Finolex, Chemplast, DCW and Shriram

## **7. MANUFACTURING PROCESS:**

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 hopper 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, color concentrate granules known as master batches are mixed with the natural PVC Compound in the required proportion to give the desired color. Initial mixing can be done in any convenient container units, a scoop or small showel. 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 hopper 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 160oC and pressure of 80 lbs. /square inch gives satisfactory results. The main operations are Feeding of PVC granules into the hopper, Trimming of surplus materials, Cleaning and spraying (if required), Fixing of fittings, checking and Packing.

## 8. MANPOWER REQUIREMENT:

The enterprise requires 17 employees as detailed below:

Sr. No.	Designation of Employees	Salary Per Person	Monthly Salary ₹	Number of employees required				
				Year-1	Year-2	Year-3	Year-4	Year-5
1	Machine Operators	12,000	24000.00	2	2	2	2	2
2	Helpers	8,000	48000.00	6	6	6	8	8
1	Production supervisor	15,000	30000.00	2	2	2	2	2
2	Accounts/Stores Asst	12,500	12500.00	1	1	1	3	3
3	Office Boy	9,000	18000.00	2	2	2	2	2
	<b>Total</b>		95000.00	13	13	13	17	17

## 9. IMPLEMENTATION SCHEDULE:

The project can be implemented in 4 months' time as detailed below:

<b>Sr. No.</b>	<b>Activity</b>	<b>Time Required (in months)</b>
1	Acquisition of premises	1.00
2	Construction (if applicable)	1.00
3	Procurement & installation of Plant & Machinery	1.00
4	Arrangement of Finance	2.00
5	Recruitment of required manpower	1.00
	Total time required ( <i>some activities shall run concurrently</i> )	4.00

## **10. COST OF PROJECT:**

The project shall cost ₹ 45.83 lacs as detailed below:

<b>Sr. No.</b>	<b>Particulars</b>	<b>₹ in Lacs</b>
1	Land	5.00
2	Building	10.00
3	Plant & Machinery	12.00
4	Furniture, Electrical Installations	1.20
5	Other Assets including Preliminary / Pre-operative expenses	3.00
6	Margin for Working Capital	14.63
	<b>Total</b>	<b>45.83</b>

## **11. MEANS OF FINANCE:**

Bank term loans are assumed @ 75 % of fixed assets.

<b>Sr. No.</b>	<b>Particulars</b>	<b>₹ in Lacs</b>
1	Promoter's contribution	11.46
2	Bank Finance	34.37
	<b>Total</b>	<b>45.83</b>

## **12. WORKING CAPITAL CALCULATION:**

The project requires working capital of ₹14.63 lacs as detailed below:

Sr. No.	Particulars	Gross Amt	Margin %	Margin Amt	Bank Finance
1	Inventories	7.31	0.25	1.83	5.48
2	Receivables	3.66	0.25	0.91	2.74
3	Overheads	3.66	100%	3.66	0.00
4	Creditors	-		0.00	0.00
	<b>Total</b>	14.63		6.40	8.23

### 13. LIST OF MACHINERY REQUIRED:

A detail of important machinery is given below: Power Requirement: 35 HP

Sr. No.	Particulars	UOM	Qty	Rate (₹)	Value (₹ in Lacs)
	<b>Plant &amp; Machinery / equipments</b>				
<b>a)</b>	<b>Main Machinery</b>				
i.	PVC INJECTION M/C	NOS.	1	900000	9.00
ii.	Moulds 4 SETS	Nos	4	45000	1.80
iii.	Tools and EQUIOMENTS	Nos	1	50000	0.50
<b>b)</b>					
i.	Jigs and Fixtures	Nos	1	20,000	0.20
ii.	Spares	NOS.	1	50000	0.50
	<i>sub-total Plant &amp; Machinery</i>				<b>12.00</b>
	<b>Furniture / Electrical installations</b>				
a)	Office furniture	LS	1	25000	0.25
b)	Stores Almirah	LS	1	15,000	0.15
c)	Computer & Printer		L. S.	22000	0.80
<b>Sr. No.</b>	<b>Particulars</b>	<b>UOM</b>	<b>Qty</b>	<b>Rate (₹)</b>	<b>Value</b>
	<i>sub total</i>				<b>1.20</b>
	<b>Other Assets</b>				
a)	preliminary and preoperative				3.00
	<i>sub-totals Other Assets</i>				3.00
	<b>Total</b>				<b>16.20</b>

All the machines and equipment are available from local manufacturers. The entrepreneur needs to ensure proper selection of product mix and proper type of machines and tooling to have modern and flexible designs. It may be worthwhile to look at reconditioned imported machines, dies and tooling. Some of the machinery and dies and tooling suppliers are listed here below:

- Kamdhenu Agro Machinery  
Plot No. 6, Near Power House,  
Wathoda Road, Wathoda  
Nagpur - 440035  
Maharashtra, India
  
- Future Industries Private Limited  
Shed No. 15, Ambica Estate,  
Corporation Municipal Plot,  
Opposite Sadvichar Hospital,  
Naroda, Ahmedabad - 382330,  
Gujarat, India
  
- The Global Pharma Equipments  
Star Industrial Estate,  
D-32, Naik Pada,  
Near Hanuman Mandir,  
Opposite Dwarka Industrial Estate,  
Vasai East, Vasai - 401208,  
Maharashtra, India

#### **14. PROFITABILITY CALCULATIONS:**

<b>Sr. No.</b>	<b>Particulars</b>	<b>UOM</b>	<b>Year-1</b>	<b>Year-2</b>	<b>Year-3</b>	<b>Year-4</b>	<b>Year-5</b>
1	Capacity Utilization	%	60%	70%	80%	90%	100%
2	Sales	₹. In	61.20	71.40	81.60	91.80	102.00

		Lacs						
3	Raw Materials & Other direct inputs	₹. In Lacs	48.80	56.94	65.07	73.21	81.34	
4	Gross Margin	₹. In Lacs	12.40	14.46	16.53	18.59	20.66	
5	Overheads except interest	₹. In Lacs	2.85	3.03	3.38	3.49	3.56	
6	Interest	₹. In Lacs	3.44	3.44	2.29	1.72	1.37	
7	Depreciation	₹. In Lacs	8.40	6.00	4.20	3.00	2.70	
8	<b>Net Profit before tax</b>	₹. In Lacs	<b>-2.29</b>	<b>2.00</b>	<b>6.65</b>	<b>10.39</b>	<b>13.03</b>	

The basis of profitability calculation:

The growth of selling capacity will be increased 10% per year. (This is assumed by various analysis and study; it can be increased according to the selling strategy.)

Energy Costs are considered at Rs 7 per Kwh and fuel cost is considered at Rs. 65 per litre. The depreciation of plant is taken at 10-12 % and Interest costs are taken at 14 -15 % depending on type of industry.

## 15. BREAKEVEN ANALYSIS:

The project shall reach cash break-even at 23.89 % of projected capacity as detailed below:

Sr. No.	Particulars	UOM	Value
1	Sales at full capacity	₹. In Lacs	102.00
2	Variable costs	₹. In Lacs	81.34
3	Fixed costs incl. interest	₹. In Lacs	4.93
4	BEP = $FC/(SR-VC) \times 100$ =	% of capacity	23.89%

## 16. STATUTORY / GOVERNMENT APPROVALS



As per the allocation of business rules under the Constitution, labour is in the concurrent list of subjects. It is dealt with by the MOLE at the Central and Departments of Labour under State Governments in respective States / UTs. The MOLE has enacted workplace safety and health statutes concerning workers in the manufacturing sector, mines, ports and docks and in construction sectors.

Further, other Ministries of the Government of India have also enacted certain statutes relating to safety aspects of substances, equipment, operations etc. Some of the statutes applicable in the manufacturing sector are discussed below:

### **The Static and Mobile Pressure Vessels (Unfired) Rules, 1981**

These (SMPV) Rules are notified under the Explosives Act, 1884. These rules regulate storage, handling and transport of compressed gases. These rules stipulate requirements regarding construction and fitments, periodic testing, location, fire protection, loading and unloading facilities, transfer operations etc. in respect of pressure vessels whose water capacity exceeds one thousand litres. These rules are enforced by the Chief Controller of Explosives under the Ministry of Industry and Commerce, Govt. of India (PESO).

### **The Manufacture, Storage and Import of Hazardous Chemicals Rules (MSIHC), 1989**

These MSIHC Rules are notified under the Environment (Protection) Act, 1986. These rules are aimed at regulating and handling of certain specified hazardous chemicals. The rules stipulate requirements regarding notification of site, identification of major hazards, taking necessary steps to control major accident, notification of major accident, preparation of safety report and on-site emergency plan; prevention and control of major accident, dissemination of information etc. These rules are notified by the Ministry of Environment and Forests (MOEF) but enforced by the Inspectorates of Factories of respective States / UTs in the manufacturing sector.

## **The Factories Act, 1948 and State Factories Rules**

The Factories Act, 1948 is very comprehensive legislation dealing with the matters of safety, health and welfare of workers in factories. The Act places duties on the occupier to ensure safety, health and welfare of workers at work. Some of the salient provisions of the Act include:

- Guarding of machinery
- Hoists and Lifts; Lifting Machines and Appliances
- Revolving Machinery
- Pressure Plant
- Excessive Weight
- Protection of Eyes
- Precautions against dangerous fumes, gases etc.
- Explosive or inflammable dust, gas etc.
- Precautions in case of fire
- Safety of buildings and machinery
- Permissible limits of exposure of chemical and toxic substances
- Entrepreneur may contact State Pollution Control Board where ever it is applicable.

## **17. BACKWARD AND FORWARD INTEGRATIONS**

Chemical companies often become integrated and undergo other activities outside the chemical industry. Increased competition prompts many companies to reduce supply chain costs by looking outside the chemical sector at suppliers and customers. While most companies within the chemicals sector primarily produce chemicals, some companies also conduct other manufacturing activities. The exact proportion of chemicals sector companies that are integrated with other sector activities is unknown, but many companies actively seek vertical

integration. Many manufacturers pursue vertical integration to secure suppliers and customers for their products.

Mergers and acquisitions are a common way for companies to undertake new chemical ventures. By purchasing their chemical suppliers, some manufacturers secure future chemical feedstock for their products or other chemicals that they use in manufacturing. The company making the purchase obtains valuable expertise and equipment. Some mining and petrochemical production is more cost-effective when integrated within a chemical company.

Energy and feedstock costs are often a significant expense for chemical companies. Integrating chemical production with activities that secure supplies of chemical feedstock and energy is relatively common as chemical companies grow. Chemical companies are located near mines, oil fields, ammonia factories and water supplies. This reduces transportation costs and increases the reliability of supplies by reducing the distance between feedstock and the factory.

Some companies, such as Sino-Coking Coal and Coke Chemical Industries Incorporated, own their mines. BHP Billiton operates a broad range of mines and is primarily a mining company. It does, however, also produce petrochemical feedstock for the chemical industry and therefore operates within the chemical industry as well. These companies technically operate within both the chemical and mining industries in their normal business operations.

Integrating a chemical company with other activities provides several direct benefits for the company and is becoming increasingly common. High energy costs necessitate greater control of energy resources and minimal reliance on expensive transportation. Chemical companies experience volatile profitability due to fluctuations in feedstock and energy expenses. Some companies control

this volatility through careful supply chain management and by charging supply surcharges. Actively researching and developing alternative feedstock and energy supplies helps the company reduce costs.

Vertical integration supports these activities by eliminating redundant activities at multiple companies and increasing efficiency. By consolidating activity among multiple, similar operations, chemical companies achieve cost savings that contribute to higher profitability. End products are often very profitable, and some chemical companies purchase their former customers to take advantage of the marked-up prices of products further along in the supply chain.

Integration may become more common for many chemical companies as competition strengthens and traditional feedstock becomes more expensive. Market demand for chemical feedstock increases as emerging market economies grow and result in increased consumer spending around the world.

## **18. TRAINING CENTERS AND COURSES**

There is no such training required to start this business but, basic chemical bachelor's degree is plus point for enterpriser. Promoter may train their employees in such specialized institutions to grow up the business. There are few specialised Institutes provide degree certification in chemical Technology, few most famous and authenticate Institutions are as follows:

1. Department of chemical LD college of engineering  
No.120, Circular Road, University Area, Navrangpura,  
Opposite Gujarat University, Ahmedabad, Gujarat 380015

2. MIT College of chemical Engineering, **Pune**  
Gate.No.140, Raj Baugh Educational Complex,  
Pune Solapur Highway,  
Loni Kalbhor, Pune - 412201  
Maharashtra, India

Udyamimitra portal (link : [www.udyamimitra.in](http://www.udyamimitra.in) ) can also be accessed for handholding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc.

Entrepreneurship program helps to run business successfully is also available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates.

**Disclaimer:**

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.

Source:- Udyami Mitra/Sidbi