



**Pre-feasibility Study**

# **PVC MEMBRANE FOR WATER PROOFING MANUFACTURING PLANT**

**January 2021**

*“The figures and financial projections are approximate due to fluctuations in exchange rates, energy costs, and fuel prices etc. Users are advised to focus on understanding essential elements such as production processes and capacities, space, machinery, human resources, and raw material etc. requirements. Project investment, operating costs, and revenues can change daily. For accurate financial calculations, utilize financial calculators on SMEDA’s website and consult financial experts to stay current with market conditions.”*

**Small and Medium Enterprises Development Authority**  
Ministry of Industries and Production  
Government of Pakistan

## TABLE OF CONTENTS

<b>1</b>	<b>DISCLAIMER .....</b>	<b>3</b>
<b>2</b>	<b>EXECUTIVE SUMMARY.....</b>	<b>4</b>
<b>3</b>	<b>INTRODUCTION TO SMEDA .....</b>	<b>4</b>
<b>4</b>	<b>PURPOSE OF THE DOCUMENT .....</b>	<b>5</b>
<b>5</b>	<b>BRIEF DESCRIPTION OF PROJECT &amp; PRODUCT .....</b>	<b>5</b>
5.1	Production Process Flow .....	6
5.2	Installed and Operational Capacity .....	6
<b>6</b>	<b>CRITICAL FACTORS .....</b>	<b>6</b>
<b>7</b>	<b>GEOGRAPHICAL POTENTIAL FOR INVESTMENT .....</b>	<b>7</b>
<b>8</b>	<b>POTENTIAL TARGET CUSTOMERS / MARKETS .....</b>	<b>7</b>
<b>9</b>	<b>PROJECT COST SUMMARY .....</b>	<b>7</b>
9.1	Project Economics .....	8
9.2	Project Cost .....	9
9.3	Land and Building Requirements.....	10
9.4	Machinery & Equipment Requirement .....	11
9.5	Furniture & Fixtures Requirement.....	11
9.6	Office Vehicles Requirement .....	12
9.7	Office Equipment Requirement.....	12
9.8	Raw Material Requirement .....	13
9.9	Human Resource Requirement .....	13
9.10	Utilities and Other Cost.....	14
9.11	Revenue Generation.....	14
<b>10</b>	<b>CONTACT DETAILS.....</b>	<b>14</b>
<b>11</b>	<b>USEFUL WEB LINKS .....</b>	<b>14</b>
<b>12</b>	<b>ANNEXURES .....</b>	<b>16</b>
12.1	Income Statement.....	16
12.2	Balance Sheet .....	17
12.3	Cash Flow Statement .....	18
<b>13</b>	<b>KEY ASSUMPTIONS.....</b>	<b>19</b>
13.1	Operating Cost Assumptions .....	19
13.2	Production Cost Assumptions.....	19
13.3	Revenue Assumptions.....	20

## 1 DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the said matter. Although, the material included in this document is based on data/information gathered from various reliable sources; however, it is based upon certain assumptions, which may differ from case to case. The information has been provided on as is where is basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision, including taking professional advice from a qualified consultant/technical expert before taking any decision to act upon the information.

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### Document Control

Document No.	PREF-NO 188
Prepared by	SMEDA Punjab – OS
Revision Date	January, 2021
For information	<a href="mailto:helpdesk.punjab@smeda.org.pk">helpdesk.punjab@smeda.org.pk</a>

## 2 EXECUTIVE SUMMARY

PVC water proofing membrane is a modern roofing material, which is made of high quality flexible (plasticized) Polyvinyl Chloride (PVC). These membranes are more flexible, have high tear resistance and are used for waterproofing of roofs, foundations, underground structures, tunnels and swimming pools etc. The demand of PVC membrane is steadily increasing due to growth in construction industry as well as increased urbanization and industrialization in recent times.

This particular pre-feasibility study is for setting up a 'PVC Membrane For Water Proofing Manufacturing Plant' in any major industrial city in Pakistan. The proposed unit will be equipped with latest extrusion and molding machines to produce the high quality PVC membrane that will be sold to construction material wholesalers and retailers. Target end-users will be builders, construction companies and household consumers.

The proposed unit will have an installed capacity to produce 18.591 million square feet of PVC membrane, based on a single shift of 8 hours and 300 operational days. However, starting operational capacity is assumed at 60% with an annual increase of 5%, it will attain a maximum capacity utilization of 95% in 8<sup>th</sup> year of operation. This production capacity is estimated to be economically viable and justifies the capital as well as operational cost of the project. Entrepreneur's knowledge of the chemicals and plastic industry, competitive pricing, and strong linkage with wholesalers and retailers of hardware and building material suppliers are key factors for the success of this business.

Total project cost is estimated as Rs. 80.555 million with capital investment of Rs. 76.588 million and working capital of Rs. 3.967 million. Based on an equity finance model, the project NPV is around Rs. 28.759 million, with an IRR of 25% and Payback Period of 4.25 years. The project will provide employment opportunities to 14 people including the Owner. The legal business status of this project is assumed to be 'Sole Proprietorship'.

## 3 INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectoral research' to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need based capacity building programs of different types in addition to business guidance through help desk services.

## 4 PURPOSE OF THE DOCUMENT

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document/study covers various aspects of project concept development, start-up, and production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in **PVC Membrane for Water Proofing Manufacturing** by providing them with a general understanding of the business with the intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business set-up and its successful management.

Apart from carefully studying the whole document one must consider critical aspects provided later, which form basis of any Investment Decision.

## 5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

PVC Water Proofing Membrane are polymer based waterproofing sheets, which are made of Polyvinyl Chloride (PVC) as base material that is mixed with plasticizers, UV absorbers and other additives. The membrane sheet is highly protective and does not permit water to pass through. It has extreme temperature resistance and very good elongation to absorb all structural movements; with high tensile strength the membrane is extremely flexible and applicable to adapt to contours. The PVC Waterproofing Membrane is ideal for water proofing of inverted roofs, building foundations, underground structures, basements, tunnels and swimming pools etc.

The PVC water proofing membrane sheets are made by melting of PVC Resins through extrusion process. Afterwards, plasticizer, UV absorber and adhesives are added into the melted PVC as per the composition. The proposed unit will be equipped with an imported PVC waterproofing membrane making line. Production line will mainly

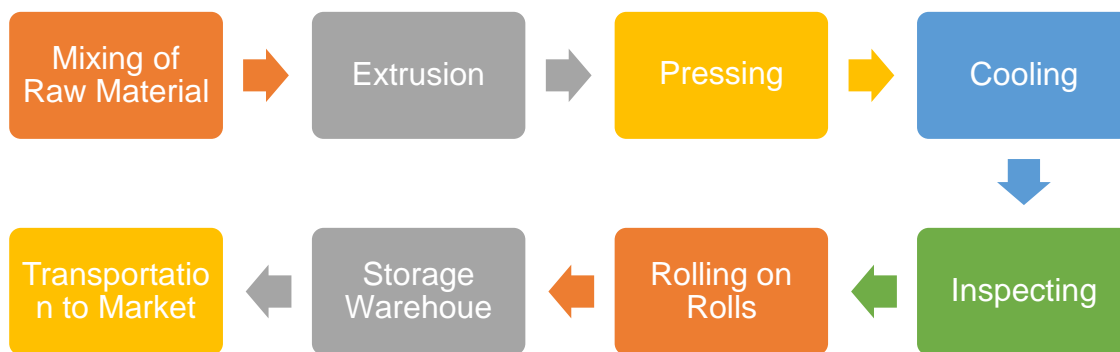
comprise of Single Screw Extrusion Line, Pressing & Cooling Chambers and Rolling Machine. The membrane sheet of desired thickness and size are made, which are rolled on the hard board rolls.

The major raw material is Polyvinyl Chloride (PVC), which will be procured from the local market. Financial analysis shows the unit shall be profitable from the very first year of operation. According to the proposed business model unit will mainly target to suppliers of building material, construction companies, builders and hardware retailers through wholesalers as well as on direct selling basis. The ideal location for the proposed project is any major industrial city across Pakistan. The legal business status of this project is assumed to be 'Sole Proprietorship'.

### 5.1 Production Process Flow

The key steps involved in manufacturing of PVC Water Proofing Membrane are Raw Material Mixing, Warming, Melting, Pressing, Cooling, Inspecting and Rolling Operations. The process flow diagram of the air bubble packing sheet manufacturing is as follows.

**Figure 1: Production Process Flow**



### 5.2 Installed and Operational Capacity

Total installed capacity of the project is assumed at 18.59 million square feet of PVC membrane, based on a single shift of 8 hours and 300 operational days. However, starting operational capacity is assumed at 60% (11.15 million sq. ft.) with an annual increase of 5%, it will attain a maximum capacity utilization of 95% (17.66 million sq. ft.) in 8<sup>th</sup> year of operation.

## 6 CRITICAL FACTORS

Following are the factors critical for the success of this business venture;

- ⇒ Background knowledge and related experience of the entrepreneur in the field of plastic or polymer related manufacturing.
- ⇒ Selection of quality PVC granules on the basis of best analysis of cost and

revenues for a given season; cost efficiency through better management.

- ⇒ Exceed customer expectations by offering high quality product at reasonable prices with quick turnaround times.
- ⇒ Business location is the key to success for the PVC waterproof membrane unit, in order to have greater reach to its customers to meet its revenue targets.
- ⇒ Effective marketing and distribution of the product.
- ⇒ Employ careful financial and accounting analysis to ensure efficiency and proper controls.

## **7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT**

Location selection is critical to the success of the project. It is important to find a location preferably in an industrial cluster where utilities especially electricity and other infrastructure are conveniently available. Presently, Karachi, Lahore, Gujranwala, Faisalabad, Multan, Rawalpindi and Peshawar can be considered as these cities have adequate availability of skilled labor, raw material, and infrastructure. Additionally, majority of associated industries with PVC membrane for water proofing manufacturing plant are also located in these cities.

## **8 POTENTIAL TARGET CUSTOMERS / MARKETS**

Potential target customers for the produced water proofing membrane will be the housing and construction sector, predominantly commercial buildings and housing plazas. The product will be sold in the market either directly to suppliers of construction and building material, builders, private contractors and construction companies or through wholesalers and hardware retailers.

Since, majority of the target customer belongs to the business segments, therefore, above identified metropolitan cities will be the potential markets for the produced PVC water proofing membrane. The general household consumers will be targeted through retailers, while business buyers will be targeted through order manufacturing basis as well as through wholesalers.

## **9 PROJECT COST SUMMARY**

A detailed financial model has been developed to analyse the commercial viability of PVC Membrane for Water Proofing Manufacturing Unit. Various cost and revenue related assumptions along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are attached as annexures.

## 9.1 Project Economics

All the figures in this financial model have been calculated for estimated sales of Rs. 118.422 million in the year one. The capacity utilization during year one is worked out at 60% with 5% increase in subsequent years up to the maximum capacity utilization of 95%.

The following table shows internal rate of return, payback period and net present value of the proposed venture.

**Table 1: Project Economics**

Description	Details
Internal Rate of Return (IRR)	25%
Payback Period (Yrs.)	4.25
Net Present Value (Rs.)	28,759,280

Calculation of break-even analysis is as follows:

**Table 2: Breakeven (100% Equity Based)**

Break-Even Analysis	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Break-Even Revenue	47,512,408	49,888,173	52,680,420	56,010,352	59,821,862	63,628,392	68,901,984	74,981,145	81,836,399	89,995,823
Break-Even Units	3,878,564	3,702,276	3,554,085	3,435,217	3,335,440	3,225,161	3,174,969	3,140,995	3,116,513	3,115,675
Margin of Safety	60%	63%	65%	67%	69%	70%	71%	72%	70%	69%

However, for the purposes of further explanation the Project Economics based on Debt:Equity (i.e. 50:50) Model has also been computed. Based on Debt:Equity model the Internal Rate of Return, Payback Period and Net Present Value of the proposed project are provide in the table below.

**Table 3: Project Economics Based on Debt (50%):Equity (50%)**

Description	Details
Internal Rate of Return (IRR)	26%
Payback Period (Yrs.)	4.10
Net Present Value (Rs.)	45,102,398



The financial assumptions for Debt:Equity are as follows:

**Table 4: Financial Assumptions for Debt:Equity Model**

Description	Details
Debt (50%)	40,411,993
Equity (50%)	40,411,993
Interest Rate on Debt	12%
Debt Tenure	5
Debt Payment / Year	1

The projected Income Statement, Cash Flow Statement and Balance Sheet attached as annexures are based on 100% Equity Based Business Model.

## 9.2 Project Cost

Following fixed and working capital requirements have been identified for operations of the proposed business.

**Table 5: Project Cost**

Description	Amount Rs.
<b>Capital Cost</b>	
Land	8,000,000
Building / Infrastructure	13,051,250
Machinery & Equipment	51,070,953
Furniture & Fixtures	684,400
Office Vehicles	1,200,000
Office Equipment	390,500
Wapda Security	755,760
Pre-Operating Costs	1,435,000
<b>Total Capital Cost</b>	<b>76,587,863</b>
Equipment Spare Part Inventory	40,279
Raw Material Inventory	3,166,200
Cash	760,584

<b>Total Working Capital</b>	<b>3,967,064</b>
<b>Total Project Cost</b>	<b>80,554,927</b>

### 9.3 Land and Building Requirements

Approximately 2 Kanals of land would be required for establishment of proposed unit. It is recommended that required land should be procured in the industrial estates of identified city / area. The cost of land is estimated at the rate of Rs. 4 million per kanal.

The infrastructural requirements of the project mainly comprise the construction of various facilities including management office, production hall, storage, open space, etc. The cost of construction of building for the proposed unit is provided in the table below:

**Table 6: Infrastructure Requirement**

<b>Description</b>	<b>Estimated Area (sq. ft.)</b>	<b>Unit Cost (Rs.)</b>	<b>Total Cost (Rs.)</b>
Management Office	100	2,500	250,000
Staff Supervisor	72	2,500	180,000
Production Hall	2,375	2,000	4,750,000
Store Raw Material	1,250	2,000	2,500,000
Store Finished Goods	1,800	2,000	3,600,000
Stores and Spares Room	80	2,000	160,000
Kitchen	80	2,500	200,000
Wash Rooms	108	2,500	270,000
Security Guard Room	120	2,500	300,000
Electrical Room	80	2,500	200,000
Car Parking	358	50	17,900
Open Area	2,577	50	128,850
Boundary Wall			494,500
<b>Total Construction Cost</b>	<b>9,000</b>		<b>13,051,250</b>
Cost of Land			<b>8,000,000</b>
<b>Total Cost of Land &amp; Construction</b>			<b>21,051,250</b>

## 9.4 Machinery & Equipment Requirement

Plant, machinery and equipment for the proposed project are stated below.

**Table 7: Machinery & Equipment**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
PVC Waterproof Membrane making Machine	1	37,444,653	37,444,653
Generator	1	6,235,000	6,235,000
Expense for Technical Supervisor from Plant Supplier	1	3,000,000	3,000,000
Transformer	1	2,465,000	2,465,000
Installation Supervision & Training Cost	1	1,378,800	1,378,800
Electrical Room Equipment	1	435,000	435,000
Production Line Installation Labour	1	112,500	112,500
<b>Total</b>			<b>51,070,953</b>

## 9.5 Furniture & Fixtures Requirement

Details of the furniture and fixture required for the project are given below.

**Table 8: Furniture & Fixture**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Table & Chair Owner's Office	1	35,000	35,000
Sofas	4	12,000	48,000
Staff Table & Chairs	2	25,000	50,000
Visitor and Staff Chairs	20	6,950	139,000
Cupboard / Racks	4	13,500	54,000
Kitchen Table	1	20,000	20,000
Kitchen Chairs	10	3,000	30,000
Miscellaneous Furniture	1	50,000	50,000

Ceiling Fans	16	3,800	60,800
Industrial Fans	4	2,200	8,800
Exhaust Fans	11	2,800	30,800
LED Bulbs (18 Watts)	38	1,000	38,000
Air conditioners (1 Ton Split)	2	60,000	120,000
<b>Total</b>			<b>684,400</b>

## 9.6 Office Vehicles Requirement

Details of the office vehicles required for the project are given below.

**Table 9: Office Vehicles**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Pick Up	1	1,200,000	1,200,000
<b>Total</b>			<b>1,200,000</b>

## 9.7 Office Equipment Requirement

Following office and computer equipment will be required for the project.

**Table 10: Office Equipment**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Security Equipment's	1	65,000	65,000
Fridge	1	42,000	42,000
Kitchen Utensils	1	25,000	25,000
Water Dispenser	1	19,000	19,000
Microwave Oven	1	12,500	12,500
Computer	2	70,000	140,000
UPS with Batteries	1	50,000	50,000
Computer printer	1	23,000	23,000
Scanner	1	9,500	9,500
Telephones	3	1,500	4,500

<b>Total</b>			<b>390,500</b>
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## 9.8 Raw Material Requirement

Polyvinyl Chloride Resin and Plasticizer for PVC Pelleting are the main raw materials for the proposed business, which will be procured directly from local market. The following table provides the details for the raw material requirements for first year of operations for the proposed PVC membrane for water proofing manufacturing plant.

**Table 11: Raw Material Requirements (Year 1)**

<b>Description</b>	<b>Raw Material Required (Kg)</b>	<b>Unit Cost (Rs / Kg)</b>	<b>Total Raw Material Cost (Rs.)</b>
Polyvinyl Chloride Resin	216,000	140	30,240,000
Plasticizer for PVC Pelleting	129,600	293	37,972,800
Other Miscellaneous Raw Material	86,400	90	7,776,000
<b>Total</b>			<b>75,988,800</b>

## 9.9 Human Resource Requirement

In order to run operations of PVC Membrane for Water Proofing Unit smoothly, details of human resources required along with number of employees and monthly salary are recommended as under.

**Table 12: Human Resource Requirement**

<b>Description</b>	<b>No. of Employees</b>	<b>Monthly Salary per Person (Rs.)</b>
Owner / Manager	1	80,000
Supervisor/Accountant	1	50,000
Technical Supervisor	1	45,000
Helpers	5	25,000
Skilled Labour	3	35,000
Security Guards	2	25,000
Driver	1	25,000
<b>Total</b>	<b>14</b>	

### 9.10 Utilities and Other Cost

An essential cost to be borne by the project is the cost of electricity. The electricity expenses are estimated to be around Rs. 883,490 per month. Furthermore, promotional expense being essential for marketing of PVC Membrane Unit is estimated as 1% of revenue.

### 9.11 Revenue Generation

Based on the capacity utilization of 60%, sales revenue during the first year of operations is provided in the table below.

**Table 13: Revenue Generation – Year 1**

Description	Qty. Produced (Sq. ft.)	Finished Goods Inventory + Wastage (5%) (Sq. ft.)	Units for Sale (Sq. ft.)	Sale Price (Rs. / Sq. ft.)	Sales Revenue (Rs.)
PVC Membrane	11,154,309	1,487,241	9,667,068	12.25	118,421,582

## 10 CONTACT DETAILS

In order to facilitate potential investors, contact details of machinery supplier relevant to the proposed project is given below.

**Table 14: Machinery Supplier**

Name of Supplier	Address	Phone / Email
Shandong Chenhua Waterproof Co. Ltd.	Taitou Industrial Park, Shouguang City, Shandong Province, China	+86 1886 6738 661 <a href="mailto:alice@wfchenhua.com">alice@wfchenhua.com</a>

## 11 USEFUL WEB LINKS

Small & Medium Enterprises Development Authority (SMEDA)	<a href="http://www.smeda.org.pk">www.smeda.org.pk</a>
Government of Pakistan	<a href="http://www.pakistan.gov.pk">www.pakistan.gov.pk</a>
Ministry of Industries & Production	<a href="http://www.moip.gov.pk">www.moip.gov.pk</a>

Government of Punjab	<a href="http://www.punjab.gov.pk">www.punjab.gov.pk</a>
Government of Sindh	<a href="http://www.sindh.gov.pk">www.sindh.gov.pk</a>
Government of Khyber Pakhtunkhwa	<a href="http://www.khyberpakhtunkhwa.gov.pk">www.khyberpakhtunkhwa.gov.pk</a>
Government of Baluchistan	<a href="http://www.balochistan.gov.pk">www.balochistan.gov.pk</a>
Government of Gilgit Baltistan	<a href="http://www.gilgitbaltistan.gov.pk">www.gilgitbaltistan.gov.pk</a>
Government of Azad Jammu Kashmir	<a href="http://www.ajk.gov.pk">www.ajk.gov.pk</a>
Trade Development Authority of Pakistan (TDAP)	<a href="http://www.tdap.gov.pk">www.tdap.gov.pk</a>
Security Commission of Pakistan (SECP)	<a href="http://www.secp.gov.pk">www.secp.gov.pk</a>
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	<a href="http://www.fpcci.com.pk">www.fpcci.com.pk</a>
State Bank of Pakistan (SBP)	<a href="http://www.sbp.org.pk">www.sbp.org.pk</a>
Punjab Small Industries Corporation	<a href="http://www.psic.gop.pk">www.psic.gop.pk</a>
Sindh Small Industries Corporation	<a href="http://www.ssic.gos.pk">www.ssic.gos.pk</a>
Punjab Vocational Training Council (PVTC)	<a href="http://www.pvtc.gop.pk">www.pvtc.gop.pk</a>
Punjab Industrial Estates (PIE)	<a href="http://www.pie.com.pk">www.pie.com.pk</a>
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	<a href="http://www.fiedmc.com.pk">www.fiedmc.com.pk</a>
Pakistan Plastic Manufacturers Association	<a href="http://www.pakplas.com.pk">www.pakplas.com.pk</a>

## 12 ANNEXURES

### 12.1 Income Statement

Calculations										SMEDA
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	118,421,582	134,704,549	152,319,760	171,359,730	191,922,897	214,113,982	238,044,368	263,832,508	277,024,134	290,875,340
<i>Cost of sales</i>										
Raw Material Cost	75,988,800	86,437,260	97,740,594	109,958,168	123,153,148	137,392,731	152,748,389	169,296,132	177,760,938	186,648,985
Direct labour	2,124,000	2,531,100	2,998,380	3,533,805	4,146,331	4,846,025	5,644,193	6,553,536	7,208,889	7,929,778
Machinery maintenance	966,707	1,151,992	1,364,668	1,608,358	1,887,141	2,205,596	2,568,870	2,982,744	3,281,018	3,609,120
Direct electricity	10,465,920	12,471,888	14,774,390	17,412,674	20,430,871	23,878,581	27,811,524	32,292,269	35,521,496	39,073,646
Total cost of sales	89,545,427	102,592,240	116,878,032	132,513,006	149,617,491	168,322,932	188,772,976	211,124,680	223,772,341	237,261,528
Gross Profit	28,876,155	32,112,309	35,441,727	38,846,724	42,305,406	45,791,050	49,271,392	52,707,828	53,251,792	53,613,812
<i>General administration &amp; selling expenses</i>										
Administration expense	2,460,000	2,706,000	2,976,600	3,274,260	3,601,686	3,961,855	4,358,040	4,793,844	5,273,228	5,800,551
Electricity expense	135,962	149,558	164,514	180,965	199,062	218,968	240,865	264,951	291,446	320,591
Water expense	53,100	63,278	74,960	88,345	103,658	121,151	141,105	163,838	180,222	198,244
Travelling expense	492,000	541,200	595,320	654,852	720,337	792,371	871,608	958,769	1,054,646	1,160,110
Communications expense (phone, fax, mail, internet, etc.)	106,200	126,555	149,919	176,690	207,317	242,301	282,210	327,677	360,444	396,489
Office vehicles running expense	96,000	105,600	116,160	127,776	140,554	154,609	170,070	187,077	205,785	226,363
Office expenses (stationary, entertainment, janitorial services, etc)	169,920	202,488	239,870	282,704	331,706	387,682	451,535	524,283	576,711	634,382
Promotional expense	1,184,216	1,065,794	959,215	863,293	776,964	699,268	629,341	566,407	509,766	458,789
Professional fees (legal, audit, consultants, etc.)	196,800	216,480	238,128	261,941	288,135	316,948	348,643	383,508	421,858	464,044
Depreciation expense	6,158,323	6,158,323	6,158,323	6,172,121	6,169,896	6,316,419	6,332,392	6,329,817	6,329,817	6,348,308
Amortization of pre-operating costs	287,000	287,000	287,000	287,000	287,000	-	-	-	-	-
Miscellaneous expense 1	246,000	270,600	297,660	327,426	360,169	396,185	435,804	479,384	527,323	580,055
Subtotal	11,585,520	11,892,875	12,257,668	12,697,374	13,186,484	13,607,756	14,261,613	14,979,554	15,731,247	16,587,928
Operating Income	17,290,635	20,219,434	23,184,059	26,149,349	29,118,922	32,183,294	35,009,779	37,728,274	37,520,546	37,025,884
Other income (interest on cash)	127,985	418,723	773,695	1,119,378	1,439,647	1,747,980	2,067,687	2,381,196	2,678,661	2,953,870
Other income 2	-	-	-	-	-	-	-	-	-	-
Gain / (loss) on sale of computer equipment	-	-	55,625	-	-	120,018	-	-	194,561	155,327
Gain / (loss) on sale of office vehicles	-	-	-	-	480,000	-	-	-	-	-
Earnings Before Interest & Taxes	17,418,620	20,638,156	24,013,380	27,268,727	31,038,569	34,051,291	37,077,466	40,109,471	40,393,767	40,135,080
Earnings Before Tax	17,418,620	20,638,156	24,013,380	27,268,727	31,038,569	34,051,291	37,077,466	40,109,471	40,393,767	40,135,080
Tax	5,216,516	6,343,354	7,524,683	8,664,054	9,983,499	11,037,952	12,097,113	13,158,314	13,257,818	13,167,278
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>12,202,103</b>	<b>14,294,802</b>	<b>16,488,697</b>	<b>18,604,673</b>	<b>21,055,070</b>	<b>23,013,340</b>	<b>24,980,353</b>	<b>26,951,156</b>	<b>27,135,949</b>	<b>26,967,803</b>



## 12.2 Balance Sheet

Calculations											SMEDA
Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Assets</b>											
<i>Current assets</i>											
Cash & Bank	760,584	9,478,203	24,019,620	37,876,008	51,674,264	63,497,509	76,340,884	89,074,093	101,421,612	112,871,249	123,438,312
Accounts receivable		2,271,099	2,427,237	2,752,288	3,103,776	3,483,532	3,893,504	4,335,765	4,812,518	5,186,297	5,445,611
Finished goods inventory		8,610,137	9,864,638	11,238,272	12,741,635	14,386,297	16,184,897	18,151,248	20,300,450	21,516,571	22,813,609
Equipment spare part inventory	40,279	50,400	62,689	77,578	95,576	117,290	143,439	174,876	201,982	233,289	-
Raw material inventory	3,166,200	-	-	-	-	-	-	-	-	-	-
<b>Total Current Assets</b>	<b>3,967,064</b>	<b>20,409,839</b>	<b>36,374,185</b>	<b>51,944,147</b>	<b>67,615,252</b>	<b>81,484,629</b>	<b>96,562,725</b>	<b>111,735,982</b>	<b>126,736,562</b>	<b>139,807,406</b>	<b>151,697,532</b>
<i>Fixed assets</i>											
Land	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
Building/Infrastructure	13,051,250	12,398,688	11,746,125	11,093,563	10,441,000	9,788,438	9,135,875	8,483,313	7,830,750	7,178,188	6,525,625
Wapda Security	755,760	755,760	755,760	755,760	755,760	755,760	755,760	755,760	755,760	755,760	755,760
Machinery & equipment	51,070,953	45,963,858	40,856,762	35,749,667	30,642,572	25,535,476	20,428,381	15,321,286	10,214,191	5,107,095	0
Furniture & fixtures	684,400	615,960	547,520	479,080	410,640	342,200	273,760	205,320	136,880	68,440	-
Office vehicles	1,200,000	960,000	720,000	480,000	240,000	1,932,612	1,546,090	1,159,567	773,045	386,522	-
Computer equipment	222,500	149,075	75,650	259,797	172,573	87,574	300,747	199,775	101,378	348,152	231,264
Office equipment	168,000	151,200	134,400	117,600	100,800	84,000	67,200	50,400	33,600	16,800	-
<b>Total Fixed Assets</b>	<b>75,152,863</b>	<b>68,994,540</b>	<b>62,836,217</b>	<b>56,935,466</b>	<b>50,763,345</b>	<b>46,526,060</b>	<b>40,507,813</b>	<b>34,175,420</b>	<b>27,845,604</b>	<b>21,860,957</b>	<b>15,512,649</b>
<i>Intangible assets</i>											
Pre-operation costs	1,435,000	1,148,000	861,000	574,000	287,000	-	-	-	-	-	-
<b>Total Intangible Assets</b>	<b>1,435,000</b>	<b>1,148,000</b>	<b>861,000</b>	<b>574,000</b>	<b>287,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>80,554,927</b>	<b>90,552,379</b>	<b>100,071,402</b>	<b>109,453,613</b>	<b>118,665,597</b>	<b>128,010,689</b>	<b>137,070,537</b>	<b>145,911,402</b>	<b>154,582,166</b>	<b>161,668,363</b>	<b>167,210,181</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
Accounts payable		235,770	271,288	311,578	357,245	408,966	467,502	533,706	608,098	669,365	725,755
<b>Total Current Liabilities</b>	<b>-</b>	<b>235,770</b>	<b>271,288</b>	<b>311,578</b>	<b>357,245</b>	<b>408,966</b>	<b>467,502</b>	<b>533,706</b>	<b>608,098</b>	<b>669,365</b>	<b>725,755</b>
<i>Other liabilities</i>											
<i>Shareholders' equity</i>											
Paid-up capital	80,554,927	80,554,927	80,554,927	80,554,927	80,554,927	80,554,927	80,554,927	80,554,927	80,554,927	80,554,927	80,554,927
Retained earnings		9,761,682	19,245,188	28,587,108	37,753,425	47,046,796	56,048,109	64,822,770	73,419,141	80,444,072	85,929,500
<b>Total Equity</b>	<b>80,554,927</b>	<b>90,316,609</b>	<b>99,800,114</b>	<b>109,142,034</b>	<b>118,308,351</b>	<b>127,601,723</b>	<b>136,603,035</b>	<b>145,377,696</b>	<b>153,974,067</b>	<b>160,998,999</b>	<b>166,484,426</b>
<b>TOTAL CAPITAL AND LIABILITIES</b>	<b>80,554,927</b>	<b>90,552,379</b>	<b>100,071,402</b>	<b>109,453,613</b>	<b>118,665,597</b>	<b>128,010,689</b>	<b>137,070,537</b>	<b>145,911,402</b>	<b>154,582,166</b>	<b>161,668,363</b>	<b>167,210,181</b>

## 12.3 Cash Flow Statement

Calculations											SMEDA
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit		12,202,103	14,294,802	16,488,697	18,604,673	21,055,070	23,013,340	24,980,353	26,951,156	27,135,949	26,967,803
Add: depreciation expense		6,158,323	6,158,323	6,158,323	6,172,121	6,169,896	6,316,419	6,332,392	6,329,817	6,329,817	6,348,308
amortization of pre-operating costs		287,000	287,000	287,000	287,000	287,000	-	-	-	-	-
Accounts receivable		(2,271,099)	(156,138)	(325,051)	(351,488)	(379,756)	(409,972)	(442,261)	(476,753)	(373,779)	(259,315)
Finished goods inventory		(8,610,137)	(1,254,501)	(1,373,634)	(1,503,363)	(1,644,662)	(1,798,600)	(1,966,350)	(2,149,202)	(1,216,121)	(1,297,037)
Equipment inventory	(40,279)	(10,120)	(12,290)	(14,889)	(17,998)	(21,714)	(26,149)	(31,437)	(27,106)	(31,307)	233,289
Raw material inventory	(3,166,200)	3,166,200	-	-	-	-	-	-	-	-	-
Accounts payable		235,770	35,518	40,290	45,667	51,721	58,536	66,204	74,392	61,266	56,391
Cash provided by operations	(3,206,479)	11,158,040	19,352,714	21,260,737	23,236,612	25,517,556	27,153,573	28,938,902	30,702,304	31,905,825	32,049,438
<i>Financing activities</i>											
Issuance of shares	80,554,927	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	80,554,927	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(76,587,863)	-	-	(257,572)	-	(1,932,612)	(298,171)	-	-	(345,171)	-
Cash (used for) / provided by investing activities	(76,587,863)	-	-	(257,572)	-	(1,932,612)	(298,171)	-	-	(345,171)	-
<b>NET CASH</b>	<b>760,584</b>	<b>11,158,040</b>	<b>19,352,714</b>	<b>21,003,165</b>	<b>23,236,612</b>	<b>23,584,944</b>	<b>26,855,402</b>	<b>28,938,902</b>	<b>30,702,304</b>	<b>31,560,655</b>	<b>32,049,438</b>

## 13 KEY ASSUMPTIONS

### 13.1 Operating Cost Assumptions

Description	Details
Water Expense	2.5% of Direct Staff Salaries
Communication Expenses	5% of Direct Staff Salaries
Traveling Expenses	20% of Administration Expenses
Promotional Expenses	1% of Revenue
Depreciation Method	Straight Line Depreciation
Depreciation Rate	10% on Machinery 33% on Office Equipment 10% on Furniture & Fixture 20% on Vehicles
Inflation Growth Rate	10%
Electricity Price Growth Rate	10%
Salaries Growth Rate	10%
Water Price Growth Rate	5%

### 13.2 Production Cost Assumptions

Description	Details
Maximum Operational Capacity (Sq. ft.)	18.59 Million
Cost of Raw Materials	
Polyvinyl Chloride (PVC)	Rs. 140 / kg.
Plasticize for PVC Pelleting	Rs. 293 / kg.
Other Materials	Rs. 90
Ratio of Raw Material Mix	
Polyvinyl Chloride (PVC)	50%
Plasticize for PVC Pelleting	30%

Other Materials	20%
Cost of Sales per kg. of input	Rs. 175.90
Cost of Sales	Rs. 6.81 per sq. ft.
Conversion Factor – kg. to sq. ft.	25.82 sq. ft. per kg.
Production Capacity Input	300 kg per hour 7,746 sq. ft. per hour
Production Wastage	5%
Cost of Goods Sold Growth Rate	5%

### 13.3 Revenue Assumptions

Description	Details
Sale Price Growth Rate	5%
Sale Price	Rs. 12.25 per sq. ft.
Capacity Utilization	60%
Estimated Sales – Year 1	9.67 million sq. ft.
Finished Goods Inventory – Year 1	929,526 sq. ft.
Capacity Utilization Growth Rate	5%
Maximum Capacity Utilization	95%
Hours Operational / Day	8
Days Operational / Year	300

# Small and Medium Enterprises Development Authority

## HEAD OFFICE

4th Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road, Lahore  
Tel: (92 42) 111 111 456, Fax: (92 42) 36304926-7

[www.smeda.org.pk](http://www.smeda.org.pk), [helpdesk@smeda.org.pk](mailto:helpdesk@smeda.org.pk)

REGIONAL OFFICE PUNJAB	REGIONAL OFFICE SINDH	REGIONAL OFFICE KPK	REGIONAL OFFICE BALOCHISTAN
3 <sup>rd</sup> Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road Lahore, Tel: (042) 111-111-456 Fax: (042) 36304926-7 <a href="mailto:helpdesk.punjab@smeda.org.pk">helpdesk.punjab@smeda.org.pk</a>	5 <sup>TH</sup> Floor, Bahria Complex II, M.T. Khan Road, Karachi. Tel: (021) 111-111-456 Fax: (021) 5610572 <a href="mailto:helpdesk-khi@smeda.org.pk">helpdesk-khi@smeda.org.pk</a>	Ground Floor State Life Building The Mall, Peshawar. Tel: (091) 9213046-47 Fax: (091) 286908 <a href="mailto:helpdesk-pew@smeda.org.pk">helpdesk-pew@smeda.org.pk</a>	Bungalow No. 15-A Chaman Housing Scheme Airport Road, Quetta. Tel: (081) 831623, 831702 Fax: (081) 831922 <a href="mailto:helpdesk-qta@smeda.org.pk">helpdesk-qta@smeda.org.pk</a>