
Pre-Feasibility Study

TUFF TILES MANUFACTURING UNIT



Small and Medium Enterprises Development Authority

Ministry of Industries & Production

Government of Pakistan

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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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2 EXECUTIVE SUMMARY

This pre-feasibility study provides information about the investment opportunity in establishing the Tuff Tiles Manufacturing Unit. The factor that leads to the development of this facility is the fact that Housing and Construction as well as Government initiated development projects demand mass availability of blocks all over the year.

The focus of the business would be to produce tuff tiles (straight pavers and interlocking pavers) and curb stones. All these products will be sold to wholesalers, construction companies, civil works contractors and housing societies in major cities of Pakistan.

The proposed business venture should preferably be located in any of the major urban cities of Pakistan and will be established on purchased land. The proposed unit will produce 6.53 million tuff tiles and curb stones (6,289,920 tuff tiles and 239,616 curb stones) in 312 working days with 08 operational hours per day, however, initial operational capacity is assumed at 70%, whereas, maximum operational capacity utilization is 95%. This production capacity is estimated to be economically viable and justifies the capital as well as operational cost of the project. However, entrepreneur's knowledge of construction sector, competitive pricing and strong networking with civil works contractors and construction companies are factors for the success of this project.

The estimated total cost of the proposed tuff tiles manufacturing unit is Rs. 30.73 million out of which Rs. 26.69 million is the capital cost and Rs. 4.03 million is for working capital. The project is to be financed through 50% debt and 50% equity. The project NPV is around Rs. 33.63 million, with an IRR of 38% and Payback Period of 3.42 years. The project will provide employment opportunities to 19 individuals including owner / manager. The legal business status of this project is proposed as '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 'sectorial 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, production, marketing, finance, and business management.

The purpose of this document is to facilitate potential investors in **Tuff Tiles Manufacturing** business 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 it's successful management.

Apart from carefully studying the whole document, one must consider critical aspects provided later on, which shall form the basis of any investment decision.

5 BRIEF DESCRIPTON OF PROJECT & PRODUCT

The project envisages the establishment of a tuff tile manufacturing unit. Tuff tiles manufacturing is a sub-sector of housing & construction that mainly entails the production of different sizes of blocks, used as prefabricated material for various construction activities. Such as construction of road side pave ways, garage and parking floorings, walls making, block paved driveways, and floor coverings of commercial buildings, etc.

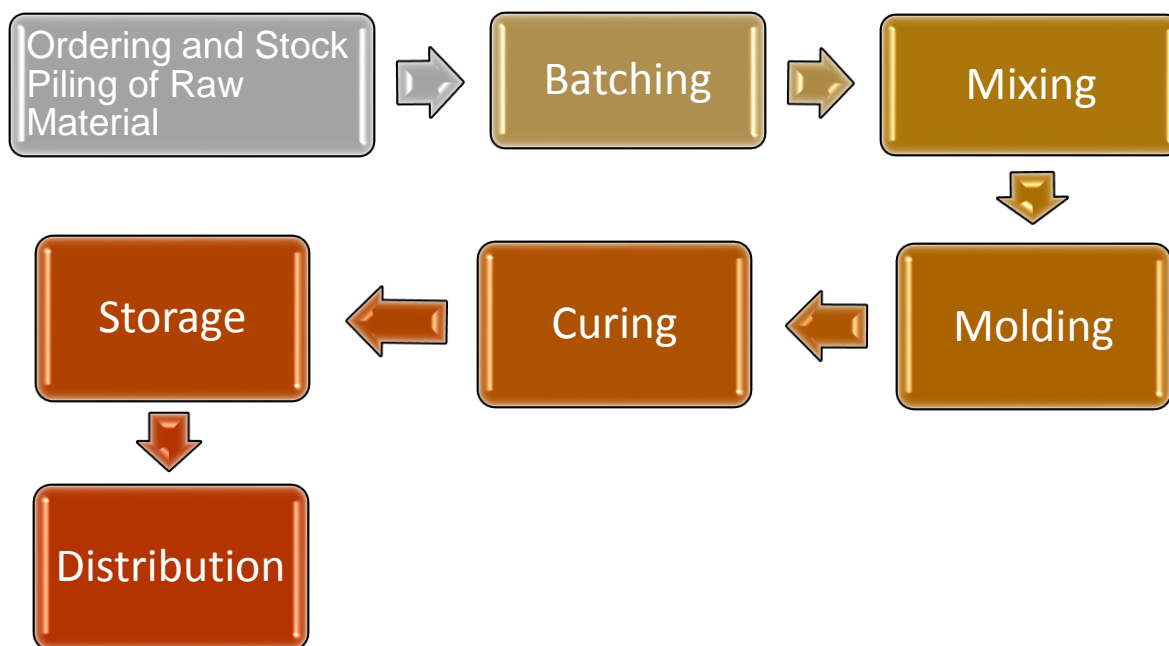
The proposed unit have a semi-automatic plant that will produce Straight Pavers (60 pcs / mint), Interlocking Payers (45 pcs / mint) and Curb Stones (8 pcs / mint) and other construction blocks (as per order) of standard quality. All the payers and curbs will be produced on-ordered basis and raw material will be purchased according to the demand. Total 19 people will be hired to look after the operations of the unit including owner / manager.

5.1 Production Process Flow

The production process flow of tuff tiles manufacturing unit starts with the purchasing of required material from the market. Raw material is then mixed according to composition

of the required product. Mixed raw material is then poured into hopper for pouring it in molds of desired shape and size. Tuff tiles are removed from molds and are placed for drying in open area where they are cured with water manually. Dried tuff tiles are then stacked and are then dispatched to customers.

Figure 1: Production Process Flow



5.2 Proposed Product Mix

The product mix would include two different type of pavers and curb stone. Detailed production mix is given in table below:

Table 1: Product Mix

Description	Production Percentage
Straight Pave (19.85x9.85x6)	40%
Interlocking Pave (22x10.9x6)	40%
Curb K-1 (35x12x38)	20%
Total	100%

5.3 Installed & Operational Capacities

The installed and operational capacities of the tuff tiles unit mainly depends upon the installed machinery. The pre-feasibility study is based on an installed capacity of manufacturing 6,529,536 pavers and curb stones per annum on 08 hours single shift basis while maximum capacity utilization of the unit is assumed at 95%. However, during

1st year of operations unit will operate at 70% capacity and will manufacture 4,402,994 units of pavers and 167,731 units of curb stones.

The details of operational and installed capacity according to product mix are provided in the table below:

Table 2: Installed and Operational Capacities

Product Mix	Annual Production Capacity (Units)	Operational Capacity in year 1 @ 70% (Units)
Straight Pave (19.85x9.85x6)	3,594,240	2,515,968
Interlocking Pave (22x10.9x6)	2,695,680	1,886,976
Curb K-1 (35x12x38)	239,616	167,731
Total	6,529,536	4,570,675

6 CRITICAL FACTORS

Following points should also be ensured to make the business successful:

- ⇒ Entrepreneur's knowledge, background and relevant experience in the field of housing and construction
- ⇒ Efficient utilization of material and resources to manage quality as well as service delivery within specified financial resources and timeframe
- ⇒ Procuring the quality construction material and efficient use of skilled and semi-skilled labor force
- ⇒ Location considerations; proximity of office / plant to develop and newly developing housing schemes
- ⇒ Stringent supervision of the production process at every level.
- ⇒ Higher return on investment and a steady growth of business is closely associated with regular training and capacity building of the entrepreneur and employees.

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

Urban cities such as Karachi, Lahore, Peshawar, Quetta, Rawalpindi, Islamabad, Multan, Sialkot, Faisalabad, Hyderabad, etc., would be an ideal choice for starting the proposed business due to developed or newly developing housing societies, parks, roads, government and private buildings, etc. which has huge demand of tuff tile and related accessories. These major cities also have continuous flow of construction requisite materials. Additionally, infrastructure facilities would also be easily available in such areas.

8 POTENTIAL TARGET CUSTOMERS / MARKETS

The potential target customers of the proposed tuff tiles manufacturing facility will be construction companies, housing societies, civil work contractors, construction material

dealers, etc. Considering to that, major cities like Karachi, Lahore, Peshawar, Quetta, Rawalpindi, Islamabad, Multan, Sialkot, Faisalabad, Hyderabad, etc., with large urban base would be the potential target markets for the proposed business.

9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyse the commercial viability of the proposed Tuff Tiles Manufacturing Unit. Various costs 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 also attached as annexure.

9.1 Project Economics

The following table shows Internal Rate of Return, Payback Period and Net Present Value:

Table 3: Project Economics

Description	Detail
IRR	38%
NPV	Rs. 33,628,462
Pay Back Period (years)	3.42

Returns on the project and its profitability are highly dependent on the efficiency of the entrepreneur.

9.2 Project Financing

Following table provides the details of required equity and variables related to bank loan:

Table 4: Project Financing

Description	Detail
Total Equity	Rs. 15,363,858
Total Debt	Rs. 15,363,858
Interest rate	12%
Debt tenure (years)	5

9.3 Project Cost

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

Table 5: Project Cost

Description	Amount Rs.
Capital Investment	
Land	3,125,000
Building / Infrastructure	6,625,000
Machinery & Equipment	12,506,000
Furniture & Fixtures	240,000
Office Vehicles	2,147,600
Training Cost	100,000
Pre-operating Costs	1,819,915
Office Equipment	130,000
Total Capital Costs	26,693,515
Working Capital	
Equipment Spare Part Inventory	74,217
Raw Material Inventory	1,931,404
Upfront Insurance Payment	732,680
Cash	1,295,901
Total Working Capital	4,034,202
Total Investment	30,727,716

9.4 Space Requirement

The proposed Tuff Tiles Manufacturing Unit will be established on purchased land. Therefore, space may be acquired in the industrial estate or in outskirts of big cities. The cost of the land and construction will depend on the area and geographical location of the unit. An estimated area of 2.5 Kanal will be required for the proposed venture.

The area requirement has been calculated on the basis of space requirement for production, management, storage and other allied facilities. However, the units operating in the industry do not follow any set pattern. Following table shows calculations for project space requirement:

Table 6: Space Requirement

Description	Area (Sq. ft.)	Cost (Rs. / Sq. ft.)	Amount (Rs.)
Management building	500	2,500	1,250,000
Production & Stacking Area	3,000	500	1,500,000
Cement Store	1,000	1,000	1,000,000
Water Tank (2500 Gallon)	2,500	400	1,000,000

Cafeteria & Staff facilities	1,000	1,000	1,000,000
Pavement/driveway	2,000	250	500,000
Grounds	3,750	100	375,000
Total Space and Infrastructure			6,625,000

Cost of land is estimated as Rs. 1.25 million per Kanal.

9.5 Machinery and Equipment Requirement

Following table provides list of machinery and equipment required for tuff tiles manufacturing unit:

Table 7: Machinery and Equipment Requirement

Description	Quantity	Cost / Unit	Amount (Rs.)
KM-24 Block Making Machine	1	7,200,000	7,200,000
Installation charges			50,000
Income Tax	6%		432,000
Sales Tax	17%		1,224,000
Total Cost of Machine			8,906,000
Generator 115 kVA			1,500,000
Inland transportation			
Fork Lifter			1,500,000
Water Bore			100,000
Miscellaneous			500,000
Total Machinery & Equipment			12,506,000

9.6 Furniture and Fixture Requirement

The details of required furniture and fixture for the proposed tuff tiles manufacturing unit are provided in the following table:

Table 8: Furniture and Fixture Requirement

Description	Quantity	Cost / Unit Rs.	Amount Rs.
Furniture			100,000
Air conditioners (1.5 ton window)	2	70,000	140,000
Total Furniture & Fixtures			240,000

9.7 Office Equipment Requirement

Following office equipment will be required for the proposed venture:

Table 9: Office Equipment Requirement

Description	Quantity	Cost / Unit Rs.	Amount Rs.
Computers	1	40,000	40,000

UPS	1	40,000	40,000
Computer printer (s)	1	15,000	15,000
Scanner	1	15,000	15,000
Telephones	2	2,500	5,000
Fax machines	1	15,000	15,000
Total Office Equipment			130,000

9.8 Raw Material Requirement

Main raw material required for manufacturing of tuff tiles is cement, sand and crush stone. Following are the details of raw material required for tuff tiles:

Table 10: Raw Material Requirement

Description	Amount Rs.
Cement	550 per Bag
Crush Stone (< 5 mm FM)	40,000 / truck 800ft ³
Mix Sand (< 1.6 mm FM)	36,000 / truck 800ft ³

9.9 Human Resource Requirement

In order to run operations of Tuff Tiles Manufacturing Unit smoothly, details of human resources required along with number of employees and monthly salary are recommended as under:

Table 11: Human Resource Requirement

Description	No. of Employees	Salary per Employee per Month (Rs.)
Owner / Manager	1	150,000
Finance Manager	1	100,000
Marketing Manager	1	100,000
Accountant	1	30,000
Supervisor	1	75,000
Plant Operator	1	50,000
Labor	8	18,000
Truck Driver	1	18,000
Helper	1	15,000
Lift Operator	1	16,000
Guards	2	16,000
Total	19	

It is assumed that the owner would have prior experience or knowledge about the housing and construction business. Salaries of all employees are estimated to increase at 10% annually.

9.10 Other Costs

An essential cost to be borne by the business is the cost of electricity; the annual electricity expenses is estimated as Rs. 2.05 million. This project also requires marketing and promotional activities; for which approximately Rs. 500,000 will be spent on marketing and promotion expenses annually. Similarly, during 1st year of operation communication and office expenses are estimated at Rs. 258,000 and Rs. 516,000 respectively. The cost of maintenance of machinery is assumed as Rs. 890,600 per annum.

9.11 Revenue Generation

Following tables provide assumption for revenues generation assumptions of the proposed pavers and curb stone manufacturing unit during first year of operation:

Table 12: Revenue Generation in First Year

Product Description	Units Sold	Price / unit Rs.	Revenue Rs.
Straight Pave (19.85x9.85x6)	2,515,968	12.50	31,449,600
Interlocking Pave (22x10.9x6)	1,886,976	13.50	25,474,176
Curb K-1 (35x12x38)	167,731	75.00	12,579,840
Total	4,570,675		69,503,616

10 CONTACT DETAILS

In order to facilitate potential investors, contact details of private sector Service Providers relevant to the proposed project are given in table below:

10.1 Machinery Suppliers

Name of Supplier	Address	Phone	E-mail / Website
K.M. Mughal	Band Road, Lahore	+92-300-8021162, +92-302-8421162	www.kmmughal.com.pk

11 USEFUL LINKS

Small & Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
Government of Pakistan	www.pakistan.gov.pk
Ministry of Industries & Production	www.moip.gov.pk
Ministry of Education, Training & Standards in Higher Education	www.moptt.gov.pk
Government of Punjab	www.punjab.gov.pk

Government of Sindh	www.sindh.gov.pk
Government of Khyber Pakhtunkhwa	www.khyberpakhtunkhwa.gov.pk
Government of Baluchistan	www.balochistan.gov.pk
Government of Gilgit Baltistan	www.gilgitbaltistan.gov.pk
Government of Azad Jamu Kashmir	www.ajk.gov.pk
Trade Development Authority of Pakistan (TDAP)	www.tdap.gov.pk
Security & Exchange Commission of Pakistan (SECP)	www.secp.gov.pk
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
State Bank of Pakistan (SBP)	www.sbp.org.pk
Punjab Small Industries Corporation	www.psic.gop.pk
Sindh Small Industries Corporation	www.ssic.gos.pk
Punjab Vocational Training Council (PVTTC)	www.pvtc.gop.pk
Technical Education and Vocational Training Authority (TEVTA)	www.tevta.org
Punjab Industrial Estates (PIE)	www.pie.com.pk
All Pakistan Cement Manufacturers Association (APCMA)	www.apcma.com

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	69,503,616	80,053,272	91,794,419	104,846,437	119,339,916	135,417,654	145,573,978	156,492,027	168,228,929	180,846,098	
<i>Cost of sales</i>											
Raw material cost	46,353,689	52,147,900	58,405,648	65,158,801	72,441,255	80,289,057	84,303,510	88,518,686	92,944,620	97,591,851	
Direct labor	3,525,000	3,945,014	4,329,483	4,751,372	5,214,327	5,722,351	6,286,380	6,898,431	7,570,071	8,307,104	
Machinery maintenance	890,600	979,660	1,077,626	1,185,389	1,303,927	1,434,320	1,577,752	1,735,527	1,909,080	2,099,988	
Direct Electricity	1,747,200	2,059,200	2,416,128	2,823,850	3,288,954	3,818,841	4,200,725	4,620,798	5,082,878	5,591,166	
Total cost of sales	52,516,489	59,131,774	66,228,884	73,919,410	82,248,464	91,264,569	96,368,368	101,773,442	107,506,649	113,590,109	
Gross Profit	16,987,127	20,921,498	25,565,534	30,927,027	37,091,452	44,153,085	49,205,611	54,718,585	60,722,279	67,255,989	
<i>General administration & selling expenses</i>											
Administration expense	5,160,000	5,662,385	6,213,683	6,818,656	7,482,530	8,211,039	9,010,478	9,887,750	10,850,436	11,906,850	
Administration benefits expense	258,000	283,119	310,684	340,933	374,126	410,552	450,524	494,388	542,522	595,342	
Electricity expense	306,730	337,403	371,143	408,257	449,083	493,991	543,390	597,729	657,502	723,252	
Water expense	60,459	71,255	83,606	97,714	113,808	132,144	145,358	159,894	175,884	193,472	
Travelling expense	774,000	849,358	932,052	1,022,798	1,122,379	1,231,656	1,351,572	1,483,163	1,627,565	1,786,027	
Communications expense (phone, fax, mail, internet, etc.)	258,000	283,119	310,684	340,933	374,126	410,552	450,524	494,388	542,522	595,342	
Office vehicles running expense	322,140	354,354	389,789	428,768	471,645	518,810	570,691	627,760	690,536	759,589	
Office expenses (stationary, entertainment, janitorial services, etc)	516,000	566,238	621,368	681,866	748,253	821,104	901,048	988,775	1,085,044	1,190,685	
Promotional expense	500,000	450,000	405,000	364,500	328,050	295,245	265,721	239,148	215,234	193,710	
Insurance expense	732,680	648,674	564,668	480,662	396,656	485,587	388,469	291,352	194,235	97,117	
Professional fees (legal, audit, consultants, etc.)	250,000	275,000	302,500	332,750	366,025	402,628	442,890	487,179	535,897	589,487	
Depreciation expense	2,392,620	2,392,620	2,392,620	2,422,718	2,422,718	2,658,945	2,693,787	2,693,787	2,663,689	2,704,023	
Amortization of pre-operating costs	363,983	363,983	363,983	363,983	363,983	-	-	-	-	-	
Amortization of legal, licensing, and training costs	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	
Property tax expense	100,000	110,000	121,000	133,100	146,410	161,051	177,156	194,872	214,359	235,795	
Bad debt expense	2,085,108	2,401,598	2,753,833	3,145,393	3,580,197	4,062,530	4,367,219	4,694,761	5,046,868	5,425,383	
Miscellaneous expense 1	250,000	275,000	302,500	332,750	366,025	402,628	442,890	487,179	535,897	589,487	
Subtotal	14,339,720	15,334,106	16,449,113	17,725,781	19,447,266	20,708,459	22,211,717	23,832,125	25,588,188	27,926,813	
Operating Income	2,647,408	5,587,392	9,116,421	13,201,246	17,644,186	23,444,625	26,993,894	30,886,460	35,134,091	39,329,176	
Gain / (loss) on sale of office equipment	-	-	78,000	-	-	129,295	-	-	169,175	-	
Gain / (loss) on sale of office vehicles	-	-	-	-	859,040	-	-	-	-	-	
Earnings Before Interest & Taxes	2,647,408	5,587,392	9,194,421	13,201,246	18,503,226	23,573,920	26,993,894	30,886,460	35,303,266	39,329,176	
Interest expense on long term debt (Project Loan)	1,490,074	1,227,213	931,016	597,253	221,161	-	-	-	-	-	
Interest expense on long term debt (Working Capital Loan)	156,215	-	-	-	-	-	-	-	-	-	
Subtotal	1,646,289	1,227,213	931,016	597,253	221,161	-	-	-	-	-	
Earnings Before Tax	1,001,119	4,360,178	8,263,405	12,603,993	18,282,065	23,573,920	26,993,894	30,886,460	35,303,266	39,329,176	
Tax	72,668	830,553	2,114,691	3,633,897	5,621,222	7,473,371	8,670,362	10,032,760	11,578,642	12,987,711	
NET PROFIT/(LOSS) AFTER TAX	928,451	3,529,625	6,148,714	8,970,096	12,660,843	16,100,549	18,323,532	20,853,700	23,724,624	26,341,465	

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
Assets											
<i>Current assets</i>											
Cash & Bank	1,295,901	700,595	5,205,306	12,825,484	24,483,223	37,633,744	62,850,976	91,433,888	123,883,599	160,334,678	211,294,769
Accounts receivable		2,856,313	3,073,087	3,531,117	4,040,566	4,606,569	5,234,745	5,773,801	6,206,836	6,672,348	7,172,775
Finished goods inventory		1,117,372	1,233,625	1,381,567	1,541,877	1,715,495	1,903,432	2,007,674	2,120,280	2,239,722	2,366,461
Equipment spare part inventory	74,217	85,720	99,007	114,353	132,078	152,550	176,195	203,505	235,048	271,481	-
Raw material inventory	1,931,404	2,390,112	2,944,618	3,613,598	4,419,218	5,387,764	6,222,867	7,187,412	8,301,460	9,588,187	-
Pre-paid insurance	732,680	648,674	564,668	480,662	396,656	485,587	388,469	291,352	194,235	97,117	-
Total Current Assets	4,034,201	7,798,786	13,120,311	21,946,782	35,013,617	49,981,708	76,776,685	106,897,632	140,941,458	179,203,533	220,834,004
<i>Fixed assets</i>											
Land	3,125,000	3,125,000	3,125,000	3,125,000	3,125,000	3,125,000	3,125,000	3,125,000	3,125,000	3,125,000	3,125,000
Building/Infrastructure	6,625,000	5,962,500	5,300,000	4,637,500	3,975,000	3,312,500	2,650,000	1,987,500	1,325,000	662,500	-
Machinery & equipment	12,506,000	11,255,400	10,004,800	8,754,200	7,503,600	6,253,000	5,002,400	3,751,800	2,501,200	1,250,600	-
Furniture & fixtures	240,000	216,000	192,000	168,000	144,000	120,000	96,000	72,000	48,000	24,000	-
Office vehicles	2,147,600	1,718,080	1,288,560	859,040	429,520	3,458,731	2,766,985	2,075,239	1,383,493	691,746	-
Office equipment	130,000	104,000	78,000	202,491	146,393	90,295	234,409	169,468	104,527	271,358	196,181
Total Fixed Assets	24,773,600	22,380,980	19,988,360	17,746,231	15,323,513	16,359,526	13,874,794	11,181,007	8,487,220	6,025,204	3,321,181
<i>Intangible assets</i>											
Pre-operation costs	1,819,915	1,455,932	1,091,949	727,966	363,983	-	-	-	-	-	-
Legal, licensing, & training costs	100,000	90,000	80,000	70,000	60,000	50,000	40,000	30,000	20,000	10,000	-
Total Intangible Assets	1,919,915	1,545,932	1,171,949	797,966	423,983	50,000	40,000	30,000	20,000	10,000	-
TOTAL ASSETS	30,727,716	31,725,698	34,280,620	40,490,979	50,761,113	66,391,234	90,691,479	118,108,639	149,448,678	185,238,737	224,155,185
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable		4,086,585	4,616,810	5,195,443	5,827,026	6,516,616	7,242,940	7,666,206	8,119,785	8,606,578	8,193,850
Total Current Liabilities	-	4,086,585	4,616,810	5,195,443	5,827,026	6,516,616	7,242,940	7,666,206	8,119,785	8,606,578	8,193,850
<i>Other liabilities</i>											
Deferred tax		72,668	903,221	3,017,912	6,651,809	12,273,031	19,746,402	28,416,764	38,449,525	50,028,167	63,015,878
Long term debt (Project Loan)	13,346,757	11,274,136	8,938,655	6,306,976	3,341,534	-	-	-	-	-	-
Long term debt (Working Capital Loan)	2,017,101	-	-	-	-	-	-	-	-	-	-
Total Long Term Liabilities	15,363,858	11,346,804	9,841,876	9,324,888	9,993,343	12,273,031	19,746,402	28,416,764	38,449,525	50,028,167	63,015,878
<i>Shareholders' equity</i>											
Paid-up capital	15,363,858	15,363,858	15,363,858	15,363,858	15,363,858	15,363,858	15,363,858	15,363,858	15,363,858	15,363,858	15,363,858
Retained earnings		928,451	4,458,076	10,606,790	19,576,886	32,237,729	48,338,278	66,661,810	87,515,510	111,240,133	137,581,599
Total Equity	15,363,858	16,292,309	19,821,934	25,970,648	34,940,744	47,601,587	63,702,136	82,025,668	102,879,368	126,603,991	152,945,457
TOTAL CAPITAL AND LIABILITIES	30,727,716	31,725,698	34,280,620	40,490,979	50,761,113	66,391,234	90,691,479	118,108,639	149,448,678	185,238,737	224,155,185

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		928,451	3,529,625	6,148,714	8,970,096	12,660,843	16,100,549	18,323,532	20,853,700	23,724,624	26,341,465
Add: depreciation expense		2,392,620	2,392,620	2,392,620	2,422,718	2,422,718	2,658,945	2,693,787	2,693,787	2,663,689	2,704,023
amortization of pre-operating costs		363,983	363,983	363,983	363,983	363,983	-	-	-	-	-
amortization of training costs		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Deferred income tax		72,668	830,553	2,114,691	3,633,897	5,621,222	7,473,371	8,670,362	10,032,760	11,578,642	12,987,711
Accounts receivable		(2,856,313)	(216,774)	(458,030)	(509,449)	(566,003)	(628,176)	(539,056)	(433,035)	(465,513)	(500,426)
Finished goods inventory		(1,117,372)	(116,253)	(147,942)	(160,310)	(173,618)	(187,937)	(104,242)	(112,606)	(119,442)	(126,739)
Equipment inventory	(74,217)	(11,504)	(13,287)	(15,346)	(17,725)	(20,472)	(23,645)	(27,310)	(31,543)	(36,433)	271,481
Raw material inventory	(1,931,404)	(458,708)	(554,506)	(668,980)	(805,620)	(968,545)	(835,103)	(964,544)	(1,114,049)	(1,286,726)	9,588,187
Advance insurance premium	(732,680)	84,006	84,006	84,006	84,006	(88,931)	97,117	97,117	97,117	97,117	97,117
Accounts payable		4,086,585	530,224	578,633	631,583	689,590	726,324	423,266	453,579	486,793	(412,728)
Cash provided by operations	(2,738,300)	3,494,416	6,840,192	10,402,349	14,623,180	19,950,787	25,391,445	28,582,912	32,449,711	36,652,752	50,960,091
<i>Financing activities</i>											
Project Loan - principal repayment		(2,072,621)	(2,335,481)	(2,631,679)	(2,965,442)	(3,341,534)	-	-	-	-	-
Working Capital Loan - principal repayment		(2,017,101)	-	-	-	-	-	-	-	-	-
Additions to Project Loan	13,346,757	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	2,017,101	-	-	-	-	-	-	-	-	-	-
Issuance of shares	15,363,858	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	30,727,716	(4,089,722)	(2,335,481)	(2,631,679)	(2,965,442)	(3,341,534)	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(26,693,515)	-	-	(150,491)	-	(3,458,731)	(174,212)	-	-	(201,673)	-
Cash (used for) / provided by investing activities	(26,693,515)	-	-	(150,491)	-	(3,458,731)	(174,212)	-	-	(201,673)	-
NET CASH	1,295,901	(595,306)	4,504,711	7,620,179	11,657,738	13,150,522	25,217,232	28,582,912	32,449,711	36,451,079	50,960,091

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Description	Detail
Administration Benefits Expense	5% of Admin Expense
Communication Expense	Rs. 258,000
Office Expense	Rs. 516,000
Promotional Expense	Rs. 500,000
Professional Fees (legal, audit, consultants, etc.)	Rs. 250,000
Travelling Expense	Rs. 774,000
Bad Debt Expense	3% of Revenue

13.2 Production Cost Assumptions

Description	Detail
Weight / Piece	
Straight Pave	2.63 Kgs
Interlocking Pave	3.31 Kgs
Curb K-1	35.19 Kgs
Composition Ratio (Cement : Crush : Sand)	
Straight Pave	1 : 2 : 4
Interlocking Pave	1 : 2 : 4
Curb K-1	1 : 3 : 5
Cost of Material	
Cement	Rs. 11.00 / Kg
Crush Stone	Rs. 1.22 / Kg
Sand	Rs. 1.04 / Kg
Operating Cost Growth Rate	5%

13.3 Revenue Assumptions

Description	Detail
Sale price growth rate	7.5%
Days operational / year	312
Production Capacity / year	6,529,536
Production Capacity in year 1	70%
Percentage Increase in Production per year	5%
Maximum Production Capacity	95%
Hours operational / day	8

13.4 Financial Assumptions

Description	Detail
Debt	50%
Equity	50%
Interest Rate	12%
Debt Tenure (Years)	5