



## **CONCRETE TILES AND PAVING BLOCKS**

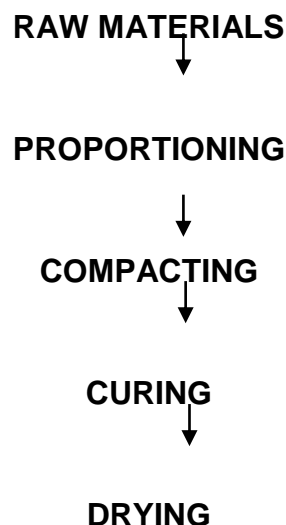
### **Introduction**

Cement concrete tiles and paving blocks are formed solid merchandise made out of cement concrete. The merchandise is created in varied sizes and shapes namely rectangular, sq. and spherical blocks of various dimensions with styles for interlocking of adjacent tiles blocks. The raw materials needed for manufacture of the product are Portland cement and aggregates that are obtainable regionally in each a part of the country.

### **Market Potential**

Cement concrete tiles and paving stones are used in sidewalks, sidewalks, gardens, waiting rooms, bus stops, industry and other public places. This product is commonly used in urban areas for the above purposes. Therefore, this device can be placed near urban and suburban markets. Streets, roadside sidewalks have been significantly revised. Concrete paving stones are an ideal material for sidewalks because they are easy to install and have a good appearance and finish. Tiles are widely used outside large buildings and homes, but many of these materials are also used as flooring in open spaces in government offices, commercial buildings and apartments.

### **Manufacturing Process**



The manufacturing process for cement concrete pavement blocks includes administration, mixing, compression, hardening and drying. For cement concrete paving stones with a water-cement ratio of 0.62, a concrete mixture with a volume of 1: 2: 4 (cement: sand: chipping) can be used. Before mixing, the concrete mixture should not be thicker than 1: 6 with respect to the combined aggregate, based on the volume of cement. The combined aggregate fineness module should be in the range 3.6-4.0. Place all ingredients in a concrete mixer and rotate the mixer for 15 minutes. Remove the prepared mixture from the mixer and consume in the next 30 minutes. A vibrating table can be used to compress the concrete mixture into the desired size and shape. After compression, remove the block from the mold and protect it from direct sunlight and wind for 24 hours. The blocks cured in this way are cured with water and completely moistened for 14-21 days. The water in the curing tank is changed every 3-4 days. After curing, the blocks are naturally dried and sent for use. Concrete paving stones receive good strength in the first 3 days of hardening and are guaranteed maximum strength increase in the first 10-15 days of hardening. After curing, the block dries in the shade, so the initial shrinkage of the block is complete before it can be used for work. Usually, the drying shrinkage is completed in 7 to 15 days, and then it can be used. Concrete tiles are similarly made using a semi-dry press of the mixture and cured for 24-36 hours. Allows to cure in the tank for 15 days. If desired, water can be sprayed to achieve maximum fitness in 15-21 days.

## Cost of Project

Particulars	Amount (Rs.in Lakhs)
Land (Owned)	0.00
Land Development Cost	0.00
Civil Works and Building	28.00
Plant and Machinery	10.04
Miscellaneous Fixed Assets	1.85
DG Set	4.40
Escalation & Contingencies	2.21
Preliminary & Preoperative Expenses	2.99
<b>Sub-total (A)</b>	<b>49.49</b>
Working Capital Margin @ 40% of Total WC Requirement	4.32
<b>Total Project Cost</b>	<b>53.81</b>
Total Working Capital Required (B) @ 20% of 1st Year Projected Turnover	10.80
<b>MEANS OF FINANCE</b>	
<b>Total Funds Required (A+B)</b>	<b>60.29</b>
<b>Loan Component</b>	
TERM LOAN (60% of A)	29.69
WORKING CAPITAL (60% of B)	6.48
<b>Total</b>	<b>36.17</b>
Equity	24.12
<b>Total</b>	<b>60.29</b>

## Detailed Cost Element

Sl. no.	Particulars	Amount (Rs. in Lakhs)
1	Concrete Mixer Machine	2.20
2	Concrete Tiles Making Machine	3.00
3	Concrete Block Making Machine	2.55
4	Curing Tanks	1.00
5	Color Mixer	0.45
6	Molds of various sizes and miscellaneous tools	0.50
7	Water Pump	0.14
8	Miscellaneous Equipment	0.20
	<b>Total</b>	<b>10.03</b>

## Contingencies and Escalations

It has been assumed at approximately 5% at cost.

## Preliminary Expenses

Particulars	Amount (Rs. in Lakhs)
Incorporation Expenses	0.15
Project Report Preparation and Consultation	0.35
Feasibility and Engineer's/Architect's Report and Plans	0.70
Legal Charges - Drafting for agreements, contracts, stamp paper, notary and affidavit cost	0.05
Security guard and others	0.75
Interest Cost for period before commercial production	0.99
<b>Total</b>	<b>2.99</b>

## Salary

Designation	Manpower	Amount (Rs. In lakhs)
Manager	1	3.00
Accountant	1	1.80
Workers	10	9.60
Security Guard	1	1.20

## Profitability Statement

Particulars	Amount (Rs. In lakhs)				
	Year- 1	Year- 2	Year- 3	Year- 4	Year- 5
<b>A. INCOME</b>					
Production Capacity (Tonnes/per annum)	2000	2000	2000	2000	2000
Capacity utilisation	60%	65%	70%	75%	80%
Production During the year	1200	1300	1400	1500	1600
<b>Annual turnover</b>	<b>54.00</b>	<b>58.50</b>	<b>63.00</b>	<b>67.50</b>	<b>72.00</b>
<b>B. OPERATING EXPENSES</b>					
Raw Material	17.82	19.31	20.79	22.28	23.76
Salary	15.60	16.38	17.20	18.06	18.96
Repair & Maintenance	1.08	1.17	1.26	1.35	1.44
Power & utilities	2.48	2.53	2.59	2.64	2.69
Depreciation and Amortisation	2.86	2.86	2.86	2.75	2.75
<b>Total Operating Expenses</b>	<b>39.84</b>	<b>42.25</b>	<b>44.69</b>	<b>47.07</b>	<b>49.60</b>
<b>Operating Profit (A-B)</b>	<b>14.16</b>	<b>16.25</b>	<b>18.31</b>	<b>20.43</b>	<b>22.40</b>
<b>C. FINANCIAL EXPENSES</b>					
Interest on term loan	2.41	2.05	1.68	1.31	0.94
Interest on working capital loan	0.55	0.55	0.55	0.55	0.55
<b>D. Other Expenses</b>					
Administrative and general Expenses	1.08	1.17	1.26	1.35	1.44
<b>Total Expenses</b>	<b>4.04</b>	<b>3.77</b>	<b>3.49</b>	<b>3.21</b>	<b>2.93</b>
<b>Profit Before Tax</b>	<b>10.12</b>	<b>12.49</b>	<b>14.82</b>	<b>17.22</b>	<b>19.47</b>
Provision for Tax	2.53	3.12	3.71	4.30	4.87
<b>Profit after Tax (PAT)</b>	<b>7.59</b>	<b>9.37</b>	<b>11.12</b>	<b>12.91</b>	<b>14.60</b>
Dividend Declared	0.00	0.00	0.00	0.00	0.00
<b>Retained Profit</b>	<b>7.59</b>	<b>9.37</b>	<b>11.12</b>	<b>12.91</b>	<b>14.60</b>

## Breakeven Point

Break Even Point (BEP)		Amount (Rs. In Lakhs)				
SL	Particulars	Year - 1	Year - 2	Year - 3	Year - 4	Year - 5
A.	Net Sales	54.00	58.50	63.00	67.50	72.00
B.	Variable Cost					
	Raw Material	17.82	19.31	20.79	22.28	23.76
	Power and Utility	2.48	2.53	2.59	2.64	2.69
	<b>Total Variable Cost</b>	<b>20.30</b>	<b>21.84</b>	<b>23.38</b>	<b>24.91</b>	<b>26.45</b>
C.	<b>Contribution (A-B)</b>	<b>33.70</b>	<b>36.66</b>	<b>39.62</b>	<b>42.59</b>	<b>45.55</b>
D.	Fixed					
	Salary	15.60	16.38	17.20	18.06	18.96
	Interest on term loan	2.41	2.05	1.68	1.31	0.94
	interest on working capital	0.55	0.55	0.55	0.55	0.55
	Repair & Maintenance	1.08	1.17	1.26	1.35	1.44
	Depreciation and Amortisation	2.86	2.86	2.86	2.75	2.75
	<b>Total Fixed Cost</b>	<b>22.50</b>	<b>23.00</b>	<b>23.54</b>	<b>24.02</b>	<b>24.64</b>
E.	<b>Breakeven Point</b>	<b>67%</b>	<b>63%</b>	<b>59%</b>	<b>56%</b>	<b>54%</b>
F.	<b>Cash BEP</b>	<b>58%</b>	<b>55%</b>	<b>52%</b>	<b>50%</b>	<b>48%</b>

## Debt-Service Coverage Ratio

		Amount (Rs. In Lakhs)				
SL	Particulars	Year - 1	Year - 2	Year - 3	Year - 4	Year - 5
i	Profit	7.59	9.37	11.12	12.91	14.60
ii	Depreciation	2.86	2.86	2.86	2.75	2.75
iii	Interest on term loan	2.41	2.05	1.68	1.31	0.94
<b>A</b>	<b>Total ( i + ii + iii )</b>	<b>12.85</b>	<b>14.27</b>	<b>15.65</b>	<b>16.97</b>	<b>18.29</b>
i	Interest on term loan	2.41	2.05	1.68	1.31	0.94
ii	Principal repayment on term loan	3.62	4.35	4.35	4.35	4.35
<b>B</b>	<b>Total ( i + ii )</b>	<b>6.03</b>	<b>6.39</b>	<b>6.02</b>	<b>5.65</b>	<b>5.28</b>
	<b>DSCR ( A / B )</b>	<b>2.13</b>	<b>2.23</b>	<b>2.60</b>	<b>3.00</b>	<b>3.46</b>

## Interest on Term Loan and Principal Repayment

Refer Annexure I for Loan Repayment Schedule.

We have assumed the repayment tenure of term loan for a period of 7 years, Rate of interest being 8.5% p.a. with the moratorium period of 10 months.

## Address of Vendors

Name of Vendor	Address and Contact Number
Steel Sales Corporation	1243/36 E, Ward Karajgar Apartment Shivaji Udyam Nagar Kolhapur - 416002, Maharashtra, India
JK Tiles Machinery	C/O, Fatik Das, Azara, Dharapur, Kamrup Metropolitan Borjhar Guwahati - 781017, Kamrup, Assam, India 08048876902

# ANNEXURE- I

Year	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Annually
I													
<b>Principal</b>													
Opening	29.69	29.69	29.69	29.33	28.97	28.61	28.25	27.88	27.52	27.16	26.80	26.43	
Repaid			0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	3.62
Closing	29.69	29.69	29.33	28.97	28.61	28.25	27.88	27.52	27.16	26.80	26.43	26.07	
<b>Interest</b>	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.19	0.19	0.19	0.19	2.41
II													
<b>Principal</b>													
Opening	26.07	25.71	25.35	24.99	24.62	24.26	23.90	23.54	23.18	22.81	22.45	22.09	
Repaid	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	4.35
Closing	25.71	25.35	24.99	24.62	24.26	23.90	23.54	23.18	22.81	22.45	22.09	21.73	
<b>Interest</b>	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	2.05
III													
<b>Principal</b>													
Opening	21.73	21.36	21.00	20.64	20.28	19.92	19.55	19.19	18.83	18.47	18.11	17.74	
Repaid	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	4.35
Closing	21.36	21.00	20.64	20.28	19.92	19.55	19.19	18.83	18.47	18.11	17.74	17.38	
<b>Interest</b>	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	1.68
IV													
<b>Principal</b>													
Opening	17.38	17.02	16.66	16.30	15.93	15.57	15.21	14.85	14.48	14.12	13.76	13.40	
Repaid	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	4.35
Closing	17.02	16.66	16.30	15.93	15.57	15.21	14.85	14.48	14.12	13.76	13.40	13.04	
<b>Interest</b>	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.09	1.31
V													
<b>Principal</b>													
Opening	13.04	12.67	12.31	11.95	11.59	11.23	10.86	10.50	10.14	9.78	9.42	9.05	
Repaid	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	4.35
Closing	12.67	12.31	11.95	11.59	11.23	10.86	10.50	10.14	9.78	9.42	9.05	8.69	
<b>Interest</b>	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.06	0.94
VI													
<b>Principal</b>													
Opening	8.69	8.33	7.97	7.60	7.24	6.88	6.52	6.16	5.79	5.43	5.07	4.71	
Repaid	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	4.35
Closing	8.33	7.97	7.60	7.24	6.88	6.52	6.16	5.79	5.43	5.07	4.71	4.35	
<b>Interest</b>	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03	0.57
VII													
<b>Principal</b>													
Opening	4.35	3.98	3.62	3.26	2.90	2.53	2.17	1.81	1.45	1.09	0.72	0.36	
Repaid	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	4.35
Closing	3.98	3.62	3.26	2.90	2.53	2.17	1.81	1.45	1.09	0.72	0.36	0.00	
<b>Interest</b>	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.20