

## **PROJECT PROFILE ON CRUSHED GRANITE STONE**

Product :: Crushed Granite Stone

Production Capacity :: 5000 units per annum (1 unit 200 cft.)  
Value Rs.140 lakhs

Month & Year of preparation :: December, 2010

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**Introduction:**

Crushed stone is also known as metal jelly. Crushed stone is segregated into various sizes viz. 35mm, 20mm, 12mm etc. for different uses. Crushed stone aggregates are used for construction of roads, bridges, housing, industrial building construction and other cement based products like RCC pipes, PSC poles, pre-moulded slabs, frames and beams etc. for fabrication.

**Plant Capacity per annum : 6250 units per annum**

Approx. value : Rs.140 lakhs

**Market & Demand :**

Housing is a basic need of the society. Hence it is receiving increased focus and support from the Government whether it is housing or industrial construction activities, all building constructions requires crushed stone. Crushed stone is also required for cement based products like RCC pipes, PSC poles, cement concrete slabs, well rings, window and door frames and road laying. Demand for crushed stone will continue to grow with the growth of its user industry.

**Raw Materials** : Raw materials required for this project is granite stone boulders of various sizes 6250 units per annum.

**Technical Aspects:****Manufacturing Process :**

It is advantageous if the crushed stone unit is set up near the queries where the granite boulders of various sizes are available for the crushing unit. The wastage from the granite industry will be of much use to the crushed stone unit. The granite stones of various sizes are fed into the jaw crushers for size reduction. Depending on the desired output size of the crushed stone, the raw materials may be fed to one or two jaw crushers in a sequence. Then these crushed stones are passed on to the rotary screen for size gradation. Material is handled through a belt conveyor to the different places of operation.

**Basis & Presumptions:**

1. The production has been calculated on the basis of single shift of 8 hours and 300 working days in a year.
2. The full production capacity presumed to be achieved in the 2<sup>nd</sup> year of operation.
3. Labor wages has been considered basing on market rates but not less than the rates prescribed by the Govt. at the locality.
4. The interest rate on an average has been taken on 15% on capital investment.

5. The entrepreneur is presumed to arrange 25% of the project cost as margin money.
6. An average plant life of 10 years has been taken into consideration. The unit is supposed to repay the installment of interest after the first year of completion.
7. The cost of machinery and equipment has been taken based on prevailing market rates.

**Production capacity :**

5000 units per annum (1 unit 200cft.)

Approximate power requirement 92 HP

**Utilities:**

Power	92 X 0.75 X 8 X 25 X 4	55,200
Water		<u>1,300</u>
<b>TOTAL:</b>		<b><u>56,500</u></b>

**Financial Aspects:**

**i. Fixed Cost:**

Land 2 acres	10,00,000
Building Office 200 sq.ft	1,50,000
Work shed 800 sq. ft.	3,00,000

**Machinery & Equipment:**

Sl.No.	Description	Qty Nos.	Rate	Amount
1	Jaw crusher 400X225mm 25HP motor capacity 2 units per hour	1	4,00,000	4,00,000
2	Jaw crusher 350x150 mm 25HP motor capacity 1.2 units per hour	1	3,00,000	3,00,000
3.	Rotary screens for 35 mm, 20 mm, and 12 mm with 10 HP motor	1	1,00,000	1,00,000
4.	Belt conveyor with 15 HP motor	3		3,50,000
5.	Pollution control cyclonic dust collector with connecting pipes, chutes & 12 HP motor			3,00,000
6.	Erection, Electrification and commissioning @ 10%			1,45,000
7.	Spare jaws, jigs, fixtures, tools etc.			1,00,000
8.	Office equipment			40,000
	<b>Total fixed cost</b>			<b>31,85,000</b>

**Working Capital:****a) Staff & Labor**

1. Manager	1 No.	8,000	8,000
2. Supervisor	1 No.	5,000	5,000
3. Clerk	1 No.	4,000	4,000
4. Skilled Workers	5 Nos.	3,000	15,000
5. Unskilled Workers	10 Nos.	2,500	25,000
6. Watchman	1 No.	3,000	3,000
Add: Perquisites @ 15%			<u>10,500</u>
<b>TOTAL:</b>			<b><u>80,500</u></b>

**b) Raw Materials:**

Granite stone boulders of various sizes 625 units  
@ Rs.1000/- per unit

**6,25,000**

**d. Other Contingent Expenses:**

i. Repairs, maintenance and replacement	20,000
ii. Office expenditure	5,000
iii. Insurance	5,000
iv. Telephone	1,000
v. Transport	5,000
vi. Sales expenses	5,000
vii. Miscellaneous expenses	<u>2,000</u>
	<b><u>43,000</u></b>

Total recurring expenditure per month    a+b+c+d                      **8,05,000**

Total working capital for 3 months    **24,15,000**

**Quality Control and Standards:**

There are no Indian Standard specifications for the quality of crushed granite stone. However, crushed stone is graded into different sizes viz. over 35mm, 20mm, 12mm etc. for different uses.

**Pollution Control:**

Lot of fine dust emerges out at the time of crushing operation. Suitable dust collection is required to be installed with extension pipes etc.

**Total Capital Investment:**

a. Fixed Cost	31,85,000
b. Working Capital for 3 months.	<u>24,15,000</u>
<b>TOTAL:</b>	<b><u>66,00,000</u></b>

**Machinery Utilization:**

80% of utilization has been taken into consideration on all the machinery.

**Financial Analysis:**

**1. Cost of Production per annum:**

a.Total recurring cost	96,60,000
b.Depreciation on building 5%	22,500
c. Depreciation on machinery & equipments 10%	1,45,000
d. Interest on total capital investment @ 15%	<u>9,90,000</u>
<b>TOTAL:</b>	<b><u>1,08,17,500</u></b>

**Turnover per year:**

5000 units of various sizes of crushed granite stone @ Rs.2,800 per unit (on an average)	1,40,00,000
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**Net profit per year**

$$1,40,00,000 - 10,81,7500 = 31,82,500$$

**Net Profit Ratio:**

23%

**Break Even Point:**

**Fixed Cost:**

Total Depreciation	1,67,500
Interest on total capital investment	9,90,000
40% of personnel expenditure	3,86,400
40% of utilities	2,71,200
40% of other contingent expenditure	<u>2,06,400</u>
<b>Total fixed cost :</b>	<b><u>20,21,500</u></b>

**Rate of return:**

48%

**Break Even Point:**

$$\frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}} =$$
$$\frac{20,21,500 \times 100}{52,04,000} = 40\%$$

**Suppliers of machinery and equipment:**

1. Hearty and Greasham (India) Ltd., Indian Chambers building, Esplanade, Madras - 1.
2. Marshal and Co. India Ltd., Marshal Building, Second Line Beach, Madras-1.
3. Sur Iron and Steel Co. Pvt. Ltd., 15, Convent Road, Calcutta-14.
4. Garlic and Co. Pvt. Ltd., Mount Road, Madras-2.
5. Arnica Industries Pvt. Ltd., 10 BT Road, Belghoria, Calcutta-56.
6. Sayaji Iron Engineering Co. Pvt. Ltd., Channi Road, Baroda.
7. Kirloskar Brothers Ltd., 7/3, Pattilior Road, Chennai-2.
8. Batliboi & Co., 96, Armenian Street, Chennai-1.

**Suppliers of raw materials:** Either from own quarries or material purchase from APMDC.

**Resource centre of Technology :** Technical guidance that would be provided by the machinery suppliers would be adequate for this product.

**List of units set up using this project profile: --- -**