

# **PROJECT PROFILE ON ENGINEERING SCALE**

## **A. INTRODUCTION & USES:**

An engineer's scale is a tool for measuring distances and transferring measurements at a fixed ratio of length. It is commonly made of plastic and is just over 12 inches (305 mm) long, but with only 12 inches of markings, leaving the ends unmarked so that the first and last measuring ticks do not wear off. It is used in making engineering drawings, commonly called blueprints, in scale. For example, "one-tenth size" would appear on a drawing to indicate a part larger than the paper itself. It is not to be used to measure machined parts to see if they meet specifications.

In scientific and engineering terminology, a device to measure linear distance and create proportional linear measurements is called a scale. A device for drawing straight lines is a ruler. In common usage both are referred to as a ruler.

## **B. MARKET POTENTIAL**

Engineer scale is having an increased demand with development of more engineering industries for the purpose of measuring items. The scales are used in schools, science colleges, architects, drawing office & engineering workshops and hence there is growing demand for this item.

## **C. Production Target:**

It is proposed to manufacture 4,00,000 Nos of Engineering Scale per annum.

## **D. BASIS AND PRESUMPTION:**

- (i) The unit is expected to work at 75% efficiency on 8 hrs. Single shift basis for 25 working days in a month.
- (ii) The full capacity utilisation will be achieved in three years. 70% in the first year followed by 85% in the next year and the 100% in subsequent years.
- (iii) Labour and wages mentioned as per prescribed minimum wages and the proprietor is considered as a manager.

- (iv) Interest considered @ 12% in the project provide for recurring and non-recurring investment.
- (v) The cost of land, construction charges, cost of machinery and equipment, raw materials and consumables other expenses etc. initiated in the profile are based on the prices prevailing at the time of project preparation. Therefore, they are subject to necessary changes from time to time based on local conditions.

**E. IMPLEMENTATION SCHEDULE:**

Activity	Period Starting to Completion	
Survey for collection of data in respect of demand, raw material, including power and fuel availability of technology, pollution control	0	1 Month
Arrangement for margin money	0	1st Months
Preparation of project document and registration and other clearance	1st	2nd Months
Financial assistance	2nd	3rd Months
Selection of site and development of land	3rd	4th months
Make shift office	3rd	4th Months
Purchasing of machines & recruitment of staff	4th	5th Months
Construction of building & selection of machinery	5th	6th Months
Installation of machinery & purchase of raw materials	6th	7th Months
Trial production	7th	8th Months

## **F. TECHNICAL ASPECTS:**

### **MANUFACTURING PROCESS**

The Process involves cutting of acrylic sheets to required length and width, polishing edges for parallel surface. The cut sheets are graduated according to the required accuracy and number marking is done by the automated scale marking machine. The surface is dried and cleaned. The finish polished scales are packed.

### **2. QUALITY STANDARDS AND SPECIFICATIONS:**

Graduation marking must be uniform in depth and accuracy to 0.01 mm conform to specification of BIS or other standard.

### **3. POLLUTION CONTROL:**

These types of units are is not producing any effluents or any other polluting materials. Therefore pollution control measures are not taken into account.

### **4. ENERGY CONSERVATION NEEDS:**

General awareness is to be created for economic use of electricity at all points. Capacitors may be used at suitable points for energy conservation. All machinery and equipment should be properly lubricated and maintained so that they consume less amount of power in use.

## **G. FINANCIAL ASPECT:**

### **(i) Land & Building:**

Land and building Rented Covered area 150 sq.mtrs. for Rs. 8,000/- per month.

### **(ii) Fixed Capital on Plant & Machinery:**

<b>Sl.No.</b>	<b>Description</b>	<b>Ind/Imported</b>	<b>Qty. (Nos.)</b>	<b>Value (Rs.)</b>
1.	Automated Scale Marking Machine complete with accessories for graduation accuracy 0.01 mm	Ind	1	14,85,000
2.	Bench type pantograph engraving machine table size 16"	Ind	1	15,000

3.	Linear Polishing machine	Ind	1	8,000
4.	Band saw bench model/ wheel 8" rockwell	Ind	1	12,000
5.	Bevel edges grinding machine bench type wheel dia 8 "	Ind	1	18,000
6.	Double ended bench grinder wheel dia 6"	Ind	1	7,000
7.	<b>TOTAL</b>			15,45,000
8.	Electrification & installation charges @ 10% of machinery cost			1,54,500
9.	Office furniture, almirah, office instruments etc.		L.S	20,000
10.	<b>Total Plant &amp; M/c Cost</b>			17,19,500

(iii) Pre-operative expenses @ 2.0 % ----- 34,390

**TOTAL FIXED CAPITAL (i+ii+iii) ----- 17, 53,890**

#### **4. WORKING CAPITAL (PERMONTH):**

##### **1. Staff & Labour Expenses:**

##### **(a) Administrative:**

Sl.No.	Description	Nos.	Rate (Rs.)	Amount (Rs.)
1	Manager	1	10,000	10,000
2	Skilled Workers	2	5,500	11,000
3	Semi skilled Workers	1	4,800	4,800
4	Helper	1	4,500	4,500
5	<b>Total</b>			30,300

6	Leave/ Benefits / Perquisite @ 15% of salary			4,545
7	<b>Grand Total</b>			<b>34,845</b>

## II. Raw Materials (per month):

SI.No.	Description	Qty.	Value (Rs.)
1.	Acrylic Sheets of thickness 1/8" transparent or milky white	500Kg	72,500
2.	Marking Ink, polishing, wheel buffing, clothes	L.S	5,000
3.	Packing Case & Box Cartons & Plastic Bags	L.S	2,500
	<b>TOTAL</b>		<b>80,000</b>

## III. Utilities (per month):

Power @ 3.80/unit for 10 KW  
Water L.S

Rs 3,800  
Rs. 2000

## IV. Other Contingent expenses (P.M.):

SI.No.	Description	Values (Rs.)
1.	Rent	8,000
2.	Postage and Stationery	500
3.	Telephone	500
4.	Repair and maintenance	500
5.	Oils & Lubricants	2,500
6.	Consumable stores	2,000
7.	Transport charges	1,500
8.	Insurance	500
9.	Sales expenses	800
10.	Misc Expenses	500

11.	<b>Total</b>	17,300
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**V. Total recurring expenditure (per month):**

1.	Staff and labor	34,845
2.	Raw material	80,000
3.	Utilities	5,800
4.	Other contingent expenses	17,300
<b>Total</b>		1,37,945

**VI. Total working capital (3 months basis)      4,13,835**

**5. Total capital investment:**

1.	Machinery and equipment	17,53,890
2.	Working Capital	4,13,835
	<b>Total</b>	21,67,725

**6. Financial Analysis:**

**1. Cost of Production (Per Year) :**

1.	Total recurring cost per year	16,55,340
2.	Depreciation on plant and machinery @ 10%	1,54,500
3.	Depreciation on office equipments @ 20%	4,000
4.	Interest on total capital investment @ 12%	2,60,127
	<b>Total</b>	20,73,967

**2. Total Sales (per year):**

Annual Production of 4,00,000 Engineering Scales

Total Annual sales 4,00,000 x 7.00 = Rs. 28,00,000

By sale of scrap (L.S) = Rs. 5,000

Total = Rs. 28,05,000

**3. Net Profit (per year) Before tax**

= Total sales – Cost of production

= 28,05,000 – 20,73,967 = 7,31,033

**4. Profit Ratio:= Net profit x 100 / Total turn over**

= 7,31,033 x 100 / 28,05,000 = **26.06 %**

**5. Rate of Return: = Net profit x 100 / Total Capital Investment**

= 7,31,033 x 100 / 21,67,725 = **33.72%**

**6. Break Even Point:**

**a) Fixed cost (per year):**

1.	Rent	96,000
2.	Interest @12 %	2,60,127
3.	Depreciation of machinery & equipments, tools, fixtures @10 %	1,54,500
4.	Depreciation of office equipment @ 20 %	4,000
5.	40% of salaries and wages	1,67,256
6.	40% of other expenses including utilities and excluding rent	72,480
	<b>Total fixed cost (FC)</b>	<b>7,54,363</b>

**BEP = FC x 100/ FC + Profit**

= 7,54,363 x 100 / ( 7,54,363 + 7,31,033 ) = **50.79 %**

**ADDRESSES OF MACHINERY & EQUIPMENT SUPPLIERS:**

1. M/s. Batliboi & Co., Parliament Street, New Delhi-110001
2. M/s. Ashoka Machine Tools Corpn., A-15, Mayapuri Indl. Area, New Delhi.
3. M/s. Amteep Machine Tools (P) Ltd., 17/7, Mathura Road, Faridabad.

4. M/s Rita Pad Printing Systems Ltd. Plot No. 44 & 45 , Sector - 18,  
Gurgaon

**NAMES AND ADDRESSES OF RAW MATERIALS SUPPLIERS:**

Raw material can be purchased from the local suppliers available in the market.