

WROUGHT IRON FURNITURE

1. INTRODUCTION:

Wrought iron is an iron alloy with a very low carbon – less than 0.08% content. Wrought iron is tough, malleable, ductile, corrosion-resistant and easily welded. The term Wrought Iron is specific to the fibrous, hand-refined material that served historically for millennia as the most used and useful form of iron. It is characterized by its composite structure. In the process of refining, iron and iron silicate are fused together. For most purposes, ductility is a more important measure of the quality of wrought iron than tensile strength.

Wrought iron is no longer produced on a commercial scale. At present, most products described as wrought iron, are actually made of hot rolled forgeable steel, viz. Guard rails, garden furniture gates etc. of ornamental designs.

2. PRODUCT & ITS APPLICATION:

The so called “Wrought iron furniture” now made from hot rolled forging grade mild steel having good ductility, is used to make home decor items such as racks, table bases, desks, gates, beds, candle holders, curtain rods, bars and bar stools, fences and railing, with ornate designs.

Furniture is a product of design with several sizes, shapes and décor, to provide appealing aesthetics in addition to convenience and space saving. It serves as a form of decorative art. The “wrought Iron” or hot rolled products are easy to process and get desired shapes and ornate designs and may fulfill the purpose of designer or artists.

3. DESIRED QUALIFICATIONS FOR PROMOTER:

Any ITI, Diploma or graduate preferably with fabrication or marketing experience.

4. MARKET POTENTIAL AND MARKETING ISSUES. IF ANY:

Demand for "Wrought Iron" furniture is generated from high income group in residential, commercial and office building as also from public place construction as it provides excellent aesthetic appeal for landscaping and decoration.

In view of growing income and standard of living and growth of construction industry at a rapid rate in the country, there is scope for these items. It is recommended to develop and produce aesthetic and modular design or art for use in furniture components and outdoor use with good ornate and intricate engraved floral shapes. Railing, fences, poles and furniture legs are the most in demand for wrought iron furniture items.

5. RAW MATERIAL REQUIREMENTS:

The forging grade hot rolled steel in various sections are the main raw materials for the project. The other items are consumables like welding rods, heat treatment and surface treatment chemicals.

6. MANUFACTURING PROCESS:

The process of manufacture involves operations as below.

Cutting of material sheets, tubes, pipes, sections as per required dimensions. Cutting is done by sawing, shearing, or chiseling or torching with hand-held torches. Certain components like cast iron and steel stock may be machined.

Bending of steel rods, pipes etc. of round, and square, rectangular shape is done by hammering, with manual bending tools or via press.

Black smithy has always been involved in wrought iron item fabrication and several process steps are cutting, splitting shaping and hot welding. The material with Artistic floral designs can be open die forged and hot welded to get the products similar to wrought iron quality.

Assembling (joining of the pieces) is done by welding, hot forge welding, riveting, fasteners, or crimping.

After the forging and welding the item is cooled and sand blasted.

It may undergo various surface treatments, primed and painted. Any additional assembly process is then completed. The finished product is then inspected and shipped.

7. MANPOWER REQUIREMENT:

The unit shall require highly skilled service persons. The unit can start from 7 employees initially and increase to 15 or more depending on business volume.

| Sr No | Type of Employees | Monthly Salary | No of Employees | | | | |
|--------------|--------------------------|-----------------------|------------------------|---------------|---------------|---------------|---------------|
| | | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| 1 | Skilled Operators | 16000 | 3 | 4 | 5 | 6 | 6 |
| 2 | Semi-Skilled/ Helpers | 7000 | 3 | 4 | 5 | 6 | 6 |
| 3 | Supervisor/ Manager | 20000 | 0 | 0 | 0 | 1 | 1 |
| 4 | Accounts/ Marketing | 15000 | 1 | 1 | 1 | 1 | 1 |
| 5 | Other Staff | 7000 | 0 | 0 | 0 | 1 | 1 |
| | TOTAL | | 7 | 9 | 11 | 15 | 15 |

8. IMPLEMENTATION SCHEDULE:

The unit can be implemented within 6 months from the serious initiation of project work.

| Sr No | Activities | Time Required in Months |
|-------|---|-------------------------|
| 1 | Acquisition of Premises | 2 |
| 2 | Construction (if Applicable) | 2 |
| 3 | Procurement and Installation of Plant and Machinery | 2 |
| 4 | Arrangement of Finance | 2 |
| 5 | Manpower Recruitment and start up | 2 |
| | Total Time Required (Activities run concurrently) | 6 |

9. COST OF PROJECT:

The unit will require total project cost of Rs 53.55 lakhs as shown below:

| Sr No | Particulars | In Lakhs |
|-------|---|----------|
| 1 | Land | 10.00 |
| 2 | Building | 25.00 |
| 3 | Plant and Machinery | 9.81 |
| 4 | Fixtures and Electrical Installation | 1.00 |
| 5 | Other Assets/ Preliminary and Preoperative Expenses | 1.20 |
| 6 | Margin for working Capital | 6.54 |
| | TOTAL PROJECT COST | 53.55 |

10. MEANS OF FINANCE:

The project will require promoter to invest about Rs 18.29 lakhs and seek bank loans of Rs 35.26 lakhs based on 70% loan on fixed assets.

| Sr No | Particulars | In Lakhs |
|-------|------------------------|----------|
| 1 | Promoters Contribution | 18.29 |
| 2 | Loan Finance | 35.26 |
| | TOTAL: | 53.55 |

11. WORKING CAPITAL REQUIREMENTS:

Working capital requirements are calculated as below:

| Sr No | Particulars | Gross Amount | Margin % | Margin Amount | Bank Finance |
|-------|-------------|--------------|----------|---------------|--------------|
| 1 | Inventories | 4.27 | 40 | 1.71 | 2.56 |
| 2 | Receivables | 4.06 | 40 | 1.62 | 2.43 |
| 3 | Overheads | 2.07 | 100 | 2.07 | 0.00 |
| 4 | Creditors | 2.85 | 40 | 1.14 | 1.71 |
| | TOTAL | 13.24 | | 6.54 | 6.70 |

12. LIST OF MACHINERY REQUIRED:

| Sr No | Particulars | UOM | Quantity | Rate | Total Value |
|-------|--------------------------------|-----|----------|--------|-------------|
| | Main Machines/ Equipment | | | | |
| 1 | Rod Twisting machine | Nos | 1 | 160000 | 160000 |
| 2 | Hand Shear Machines | Nos | 3 | 12000 | 36000 |
| 3 | Fly press | Nos | 1 | 20000 | 20000 |
| 4 | Manual Press brake | Nos | 1 | 50000 | 50000 |
| 5 | Forging Furnace | Nos | 1 | 100000 | 100000 |
| 6 | Open Die forging Hammer | Nos | 1 | 230000 | 230000 |
| 7 | Hot Forging Tools | LS | 1 | 25000 | 25000 |
| 8 | Sand Blasting Facility | Nos | 1 | 80000 | 80000 |
| 9 | Pickling and Surface treatment | Nos | 1 | 60000 | 60000 |
| 10 | Spray Painting Facility | Nos | 1 | 30000 | 30000 |
| 11 | Rod / Flat/ Pipe Bending Bench | Nos | 2 | 20000 | 40000 |

| | | | | | |
|----|---|-----|---|--------|---------|
| 12 | Pillar Drill | Nos | 1 | 30000 | 30000 |
| 13 | Lathe | Nos | 1 | 45000 | 45000 |
| 14 | Welding Machine | Nos | 2 | 25000 | 50000 |
| | Subtotal: | | | | 956000 |
| | Tools and Ancillaries | | | | |
| 1 | Misc. equipment Dies tools etc. | LS | 1 | 15000 | 15000 |
| 2 | Hand Tools and gauges | LS | 1 | 10000 | 10000 |
| | Subtotal: | | | | 25000 |
| | Fixtures and Elect Installation | | | | |
| | Storage and transport bins | LS | 1 | 10000 | 10000 |
| | Office Furniture | LS | 1 | 5000 | 5000 |
| | Telephones/ Computer | LS | 1 | 15000 | 15000 |
| | Electrical Installation | LS | 1 | 70000 | 70000 |
| | Subtotal: | | | | 100000 |
| | Other Assets/ Preliminary and Preoperative Expenses | LS | 1 | 120000 | 120000 |
| | TOTAL PLANT MACHINERY COST | | | | 1201000 |

13. PROFITABILITY CALCULATIONS:

| Sr No | Particulars | UOM | Year Wise estimates | | | | |
|-------|-------------------------------------|-----------|---------------------|--------|--------|--------|--------|
| | | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| 1 | Capacity Utilization | % | 40 | 50 | 60 | 70 | 80 |
| 2 | Sales | Rs Lakhs | 48.67 | 60.83 | 73.00 | 85.16 | 97.33 |
| 3 | Raw Materials & Other Direct Inputs | Rs Lakhs | 34.14 | 42.68 | 51.22 | 59.75 | 68.29 |
| 4 | Gross Margin | Rs. Lakhs | 14.52 | 18.15 | 21.78 | 25.41 | 29.04 |
| 5 | Overheads Except Interest | Rs. Lakhs | 7.49 | 7.49 | 7.49 | 7.49 | 7.49 |
| 6 | Interest | Rs. Lakhs | 4.94 | 4.94 | 4.94 | 4.94 | 4.94 |
| 7 | Depreciation | Rs. Lakhs | 3.70 | 3.70 | 3.70 | 3.70 | 3.70 |
| 8 | Net Profit Before Tax | Rs. Lakhs | -1.61 | 2.02 | 5.65 | 9.29 | 12.92 |

14. BREAK EVEN ANALYSIS

The project is can reach break-even capacity at 44.42 % of the installed capacity as depicted here below:

| Sr No | Particulars | UOM | Value |
|--------------|---------------------------|--------------------|--------------|
| 1 | Sales at Full Capacity | Rs. Lakhs | 121.66 |
| 2 | Variable Costs | Rs. Lakhs | 85.36 |
| 3 | Fixed Cost incl. Interest | Rs. Lakhs | 16.13 |
| 4 | Break Even Capacity | % of Inst Capacity | 44.42 |