PROJECT REPORT

Of

GALVANISED IRON ROOFING SHEET

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Galvanised Iron Roofing Sheet**.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

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PROJECT AT A GLANCE

1	Name of the Entreprenuer		xxxxxxxxxx
2	Constitution (legal Status)	:	xxxxxxxxxx
3	Father / Spouse Name		xxxxxxxxxxxx
4	Unit Address	:	xxxxxxxxxxxxxxxxxxxxxxx
			District : xxxxxxx
			Pin: xxxxxxx State: xxxxxxxxxx
			Mobile xxxxxxx
5	Product and By Product	:	**Galvanised Iron Roofing Sheets**
6	Name of the project / business activity proposed :		**GALVANISED IRON ROOFING SHEETS MANUFACTURING UNIT**
7	Cost of Project	:	Rs.23.4 Lakhs
8	Means of Finance		
	Term Loan		Rs.16.2 Lakhs
	Own Capital		Rs.2.34 Lakhs
9	Debt Service Coverage Ratio	:	1.75
10	Pay Back Period	:	5 Years
11	Project Implementation Period	:	5-6 Months
12	Break Even Point	:	40%
13	Employment	:	8 Persons
14	Power Requirement	:	30 HP
15	Major Raw materials	:	Mild Steel Sheets, Zinc Metal Ingots, Suphuric Acid , Metallic Colours
16	Estimated Annual Sales Turnover (Max Utilized Capacity)	:	83.28 Lakhs
17	Detailed Cost of Project & Means of Finance		

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Building /Shed 1500 Sq ft	Own/Rented
Plant & Machinery	17.00
Furniture & Fixtures	1.00
Working Capital	5.40
Total	**23.40**

MEANS OF FINANCE

Particulars	Amount
Own Contribution	2.34
Term Loan	16.20
Working Capital	4.86
Total	**23.40**

GALVANIZED IRON ROOFING SHEETS

INTRODUCTION:

Corrugated galvanized iron or steel is a building material composed of sheets of hot-dip galvanized mild steel, cold-rolled to produce a linear corrugated pattern in them. By galvanizing, protection of the steel structures against corrosion resistance is improved by numerous degrees of magnitude; the corrosion protection achieved by zinc-based coatings is as a result of the galvanic effect, because zinc is anodic to iron which make it acts a sacrificial metal in an aqueous or humid environment. The most common method of zinc coating is the hot-dip process in which steel sheet passes through a bath of molten zinc. The liquid zinc bonds to the iron in the steel forming a protective layer on both sides of the sheet. Gauge indicates the thickness of the sheet material. It is often stated as a number. The lower the gauge number, the thicker the material. The exact thickness will depend on the type of material such as stainless steel, or aluminum. In most cases, the lower gauge, thicker material is a stronger, more durable product within the same type of material. A material with a lower gauge number will weigh more, and may also be more difficult for the installer to work with.

USES & MARKET POTENTIAL:

Corrugated steel sheets are a popular siding and roofing choice for agricultural and commercial buildings, owing to their strength and durability. Corrugated steel sheets are commonly used in the residential sector in large amount in the form of roofing and siding options. Corrugated steel sheets have a "wavy" pattern, although several other patterns are available to choose from - including more linear and square-edged shapes. Corrugated steel sheets are manufactured using a cold-form process, in which sheets of steel are pressed flat and then run through a roll forming process. In the process of roll forming, the sheets are hard-pressed using rolling dies that create the corrugation shapes. The global corrugated steel sheets market is fueled by high demand from the commercial and agriculture sectors for use in applications such as warehouses, farm houses, garages, porches, and sheds. Corrugated steel sheets are majorly used in agricultural buildings, as these sheets feature repetitive folds on their surface. On account of the unique shape, corrugated steel sheets offer enhanced strength and reliable utility for years.

PRODUCT:

Corrugated Galvanized Roofing Sheets

RAW MATERIAL:

Mild Steel Sheets (0.4 to 3 mm)

(https://www.indiamart.com/proddetail/ms-sheet-11130883933.html)

Zinc Metal Ingots (https://www.indiamart.com/proddetail/zinc-metal-ingot-4803148588.html)

H_2SO_4 Acid (https://www.indiamart.com/proddetail/sulphuric-acid-2061434430.html)

Zinc Ammonium Chloride Flux (https://www.indiamart.com/proddetail/zinc-ammonium-chloride-flux-5745913688.html)

Metallic Colours

MANUFACTURING PROCESS:

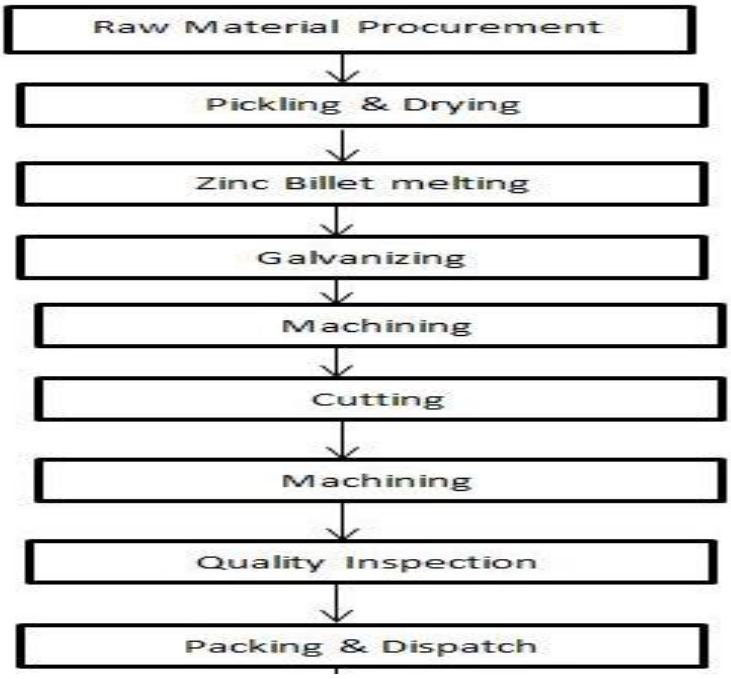

Fig.1 – Flow Chart

At first, the raw material is procured from the authorized local vendor and stored in the inventory. In the first step, the mild steel sheets are dipped in H_2SO_4 acid tank for pickling process. This process removes the dirt, foreign impurities and harmful chemicals from the surface of the sheet. The sheet is being kept inside the tank for 15-20 minutes. After this, sheets are taken out and allowed to dry.

In the next step, the heating furnace is brought up to the desired melting temperature of zinc of nearly 450 – 500°C. The zinc billets are brought from the inventory and fed inside heating furnace tank through furnace feeder. The molten zinc is stored in the galvanizing tank. Suitable heating arrangements are made to keep the zinc in molten form. Zinc ammonium chloride is also added in the tank in desired quantity that acts as a flux medium for molten zinc. This prevents the oxide formation in molten zinc.

In the next step, the dried sheets are kept inside the molten zinc for 25-40 minutes. This hot dipping forms a layer on both side of the steel sheet. The liquid zinc bonds to the iron in the steel forming a protective layer on both sides of the sheet. This process makes the sheet corrosion resistant. After this, colour coating is done over sheets as per the requirement in colorings plant.

In the next step, sheets are fed into corrugated steel sheet machine. This machine has an arrangement of successive pressure rolls that forms the corrugated layer over the surface of the sheet. The sheet is fed by the rollers in the forward direction. After this, the sheets are cut along its length at the end of machine by a cutter suitably arranged in the machine.

In the next step, the sheets are quality tested for the desired working performance. After this, they are packed and dispatched as per the required quantity.

Area:

The industrial setup requires space for Inventory, workshop or manufacturing area, space for power supply utilities and auxiliary like Generator setup. Also, some of the area of building is required for office staff facilities, documentation, office furniture, etc. Thus, the approximate total area required for complete industrial setup is 1500 - 2500Sqft.

MACHINES:

1. Cupola Furnace – The furnace is used to heat the solid metals to liquefy them by raising the temperature of inner surroundings to the desired melting temperature.

2. Corrugated Steel Sheet making Machine – This machine consists of an arrangements of successive pressure rolls, flute rolls series of rollers that deformed the sheet to the corrugated structure. (https://www.indiamart.com/proddetail/roofing-sheet-making-machine-21673853912.html)

EQUIPMENTS:

Pickling Tanks – These tanks are used to store acid for pickling process. Sheets are dipped inside these tanks. Suitable valve arrangements are there for emptying the tanks.

(https://www.indiamart.com/proddetail/frp-pickling-tanks-20242186230.html)

Pumps – Pumps are used to transfer water into the tanks as per the requirement.

(https://www.indiamart.com/proddetail/water-pump-4697260155.html)

Galvanized Tanks – These tanks are used to store the molten zinc for galvanizing process.

Power Requirement – The power consumption required to run all the machinery could be approximated as 35 – 50 kWh.

Manpower Requirement – There are requirement of skilled machine operators to run the machine set. Experience quality engineers are required for desired quality control. Some helpers are also required to transfer the material from one work station to other. Office staffs are required to maintain the documentation. The approximate manpower required is 8 – 12 including 2-3 machine operators, 2-3 helpers, and 2 – 3 office staffs and remaining quality engineers.

APPROVALS & REGISTRATION REQUIREMENT:

Basic registration required in this project:

- GST Registration
- Udyog Aadhar Registration
- Choice of a Brand Name of the product and secure the name with Trademark if required
- Factory Licence
- NOC from pollution control board.

IMPLEMENTATION SCHEDULE:

S.No.	Activity	Time required in months
1.	Acquisition of premises	1-2 Months
2.	Procurement, Installation of Plant & Machinery	2-3 Months
3.	Arrangement of Finance	2-3 Months
4.	Requirement of required Manpower	1 -1.5 Months
	Total time Required (some activities shall run concurrently)	5-6 Months

FINANCIAL ASPECTS:

PROJECTED BALANCE SHEET

PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	3.05	4.73	7.40	10.80
Add: Additions	2.34	-	-	-	-
Add: Net Profit	0.71	2.67	4.67	6.40	7.93
Less: Drawings	-	1.00	2.00	3.00	4.50
Closing Balance	3.05	4.73	7.40	10.80	14.23
CC Limit	4.86	4.86	4.86	4.86	4.86
Term Loan	14.40	10.80	7.20	3.60	-
Sundry Creditors	0.72	0.84	0.96	1.09	1.23
TOTAL :	**23.04**	**21.22**	**20.41**	**20.34**	**20.32**
APPLICATION OF FUND					
Fixed Assets (Gross)	18.00	18.00	18.00	18.00	18.00
Gross Dep.	2.65	4.91	6.83	8.47	9.87
Net Fixed Assets	15.35	13.09	11.17	9.53	8.13
Current Assets					
Sundry Debtors	3.26	3.87	4.40	4.96	5.55
Stock in Hand	3.47	3.92	4.46	5.04	5.67
Cash and Bank	0.95	0.34	0.39	0.81	0.96
TOTAL :	**23.04**	**21.22**	**20.41**	**20.34**	**20.32**
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	48.94	57.99	65.97	74.40	83.28
Total (A)	**48.94**	**57.99**	**65.97**	**74.40**	**83.28**
B) COST OF SALES					
Raw Mateiral Consumed	31.00	35.80	41.01	46.65	52.76
Electricity Expenses	2.46	2.71	2.96	3.20	3.45
Repair & Maintenance	0.24	0.29	0.33	0.37	0.42
Labour & Wages	5.87	6.46	7.11	7.82	8.60
Depreciation	2.65	2.26	1.92	1.64	1.40
Cost of Production	42.23	47.52	53.33	59.68	66.62
Add: Opening Stock /WIP	-	1.41	1.54	1.72	1.93
Less: Closing Stock /WIP	1.41	1.54	1.72	1.93	2.15
Cost of Sales (B)	40.82	47.39	53.14	59.48	66.39
C) GROSS PROFIT (A-B)	8.11	10.59	12.82	14.92	16.88
	16.58%	**18.27%**	**19.44%**	**20.05%**	**20.27%**
D) Bank Interest (Term Loan)	1.76	1.44	1.04	0.64	0.25
ii) Interest On Working Capital	0.53	0.53	0.53	0.53	0.53
E) Salary to Staff	4.62	5.08	5.59	6.15	6.76
F) Selling & Adm Expenses Exp.	0.49	0.87	0.99	1.12	1.25
TOTAL (D+E)	**7.40**	**7.92**	**8.15**	**8.44**	**8.80**
H) NET PROFIT	0.71	2.67	4.67	6.47	8.09
	1.5%	**4.6%**	**7.1%**	**8.7%**	**9.7%**
I) Taxation	-	-	-	0.07	0.15
J) PROFIT (After Tax)	0.71	2.67	4.67	6.40	7.93

PROJECTED CASH FLOW STATEMENT

PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Own Contribution	2.34	-			
Net Profit	0.71	2.67	4.67	6.47	8.09
Depreciation & Exp. W/off	2.65	2.26	1.92	1.64	1.40
Increase In Cash Credit	4.86				
Increase In Term Loan	16.20	-	-	-	-
Increase in Creditors	0.72	0.11	0.12	0.13	0.14
TOTAL :	**27.49**	**5.04**	**6.72**	**8.24**	**9.63**
APPLICATION OF FUND					
Increase in Fixed Assets	18.00	-	-	-	-
Increase in Stock	3.47	0.45	0.53	0.58	0.63
Increase in Debtors	3.26	0.60	0.53	0.56	0.59
Repayment of Term Loan	1.80	3.60	3.60	3.60	3.60
Taxation	-	-	-	0.07	0.15
Drawings	-	1.00	2.00	3.00	4.50
TOTAL :	**26.54**	**5.65**	**6.67**	**7.82**	**9.48**
Opening Cash & Bank Balance	-	0.95	0.34	0.39	0.81
Add : Surplus	0.95	- 0.61	0.05	0.43	0.15
Closing Cash & Bank Balance	**0.95**	**0.34**	**0.39**	**0.81**	**0.96**

COMPUTATION OF MANUFACTURING OF GALVANISED IRON ROOFING SHEETS

Items to be Manufactured Roofing Sheet

Manufacturing Capacity per Hour		30.00	Pcs
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		9,000	pcs
Year		Capacity	Galvanised Iron Roofing Sheets
		Utilisation	
I		50%	4,500
II		55%	4,950
III		60%	5,400
IV		65%	5,850
V		70%	6,300

COMPUTATION OF RAW MATERIAL

Item Name		**Quantity of Raw Material**	**Unit**	**Unit Rate of**	**Total CostPer Annum (100%)**
Mild Steel Sheets		117.00	tonne	50,000.00	5,850,000.00
Zing Ingots		lumsum			250,000.00
Suphuring Acid & Metallic Colours		lumsum			100,000.00
Total		**117.00**			**6,200,000.00**

Total Raw material in Rs lacs	at 100% Capacity		62.00
Cost per Pcs		(In Rs)	**688.90**

Raw Material Consumed	**Capacity Utilisation**	**Rate**	**Amount (Rs.)**
I	50%	688.90	31.00
II	55%	723.30	35.80
III	60%	759.50	41.01
IV	65%	797.50	46.65
V	70%	837.40	52.76

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	I	II	III	IV	V
Finished Goods					
(10 Days requirement)	1.41	1.54	1.72	1.93	2.15
Raw Material					
(20 Days requirement)	2.07	2.39	2.73	3.11	3.52
Closing Stock	**3.47**	**3.92**	**4.46**	**5.04**	**5.67**

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	3.47		
Less:			
Sundry Creditors	0.72		
Paid Stock	**2.75**	**0.28**	**2.48**
Sundry Debtors	3.26	0.33	2.94
Working Capital Requirement			**5.41**
Margin			0.60
MPBF			**5.41**
Working Capital Demand			**5.40**

BREAK UP OF LABOUR

Particulars		Wages Per Month	No of Employees	Total Salary
Plant Operator		15,000.00	1	15,000.00
Unskilled Worker		8,500.00	2	17,000.00
Helper		5,000.00	1	5,000.00
Security Guard		7,500.00	1	7,500.00
				44,500.00
Add: 10% Fringe Benefit				4,450.00
Total Labour Cost Per Month				48,950.00
Total Labour Cost for the year (In Rs. Lakhs)			5	5.87

BREAK UP OF SALARY

Particulars		Salary Per Month	No of Employees	Total Salary
Accountant cum store keeper		15,000.00	1	15,000.00
Administrative Staffs		10,000.00	2	20,000.00
Total Salary Per Month				35,000.00
Add: 10% Fringe Benefit				3,500.00
Total Salary for the month				38,500.00
Total Salary for the year (In Rs. Lakhs)			3	4.62

COMPUTATION OF DEPRECIATION

Description	Land	Building/shed	Plant & Machinery	Furniture	**TOTAL**
Rate of Depreciation			**15.00%**	**10.00%**	
Opening Balance	Own/Rented		-	-	-
Addition	-		17.00	1.00	18.00
	-		17.00	1.00	18.00
TOTAL		-	17.00	1.00	18.00
Less : Depreciation	-	-	2.55	0.10	2.65
WDV at end of Ist year	-	-	14.45	0.90	15.35
Additions During The Year	-	-	-	-	-
	-	-	14.45	0.90	15.35
Less : Depreciation	-	-	2.17	0.09	2.26
WDV at end of IInd Year	-	-	12.28	0.81	13.09
Additions During The Year	-	-	-	-	-
	-	-	12.28	0.81	13.09
Less : Depreciation	-	-	1.84	0.08	1.92
WDV at end of IIIrd year	-	-	10.44	0.73	11.17
Additions During The Year	-	-	-	-	-
	-	-	10.44	0.73	11.17
Less : Depreciation	-	-	1.57	0.07	1.64
WDV at end of IV year	-	-	8.87	0.66	9.53
Additions During The Year	-	-	-	-	-
	-	-	8.87	0.66	9.53
Less : Depreciation	-	-	1.33	0.07	1.40
WDV at end of Vth year	-	-	7.54	0.59	8.13

REPAYMENT SCHEDULE OF TERM LOAN 11.0%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	Cl Balance
I	Opening Balance						
	Ist Quarter	16.20	-	16.20	0.45	-	16.20
	Iind Quarter	16.20	-	16.20	0.45	-	16.20
	IIIrd Quarter	16.20	-	16.20	0.45	0.90	15.30
	Ivth Quarter	15.30	-	15.30	0.42	0.90	14.40
					1.76	1.80	
II	Opening Balance						
	Ist Quarter	14.40	-	14.40	0.40	0.90	13.50
	Iind Quarter	13.50	-	13.50	0.37	0.90	12.60
	IIIrd Quarter	12.60	-	12.60	0.35	0.90	11.70
	Ivth Quarter	11.70		11.70	0.32	0.90	10.80
					1.44	3.60	
III	Opening Balance						
	Ist Quarter	10.80	-	10.80	0.30	0.90	9.90
	Iind Quarter	9.90	-	9.90	0.27	0.90	9.00
	IIIrd Quarter	9.00	-	9.00	0.25	0.90	8.10
	Ivth Quarter	8.10		8.10	0.22	0.90	7.20
					1.04	3.60	
IV	Opening Balance						
	Ist Quarter	7.20	-	7.20	0.20	0.90	6.30
	Iind Quarter	6.30	-	6.30	0.17	0.90	5.40
	IIIrd Quarter	5.40	-	5.40	0.15	0.90	4.50
	Ivth Quarter	4.50		4.50	0.12	0.90	3.60
					0.64	3.60	
V	Opening Balance						
	Ist Quarter	3.60	-	3.60	0.10	0.90	2.70
	Iind Quarter	2.70	-	2.70	0.07	0.90	1.80
	IIIrd Quarter	1.80	-	1.80	0.05	0.90	0.90
	Ivth Quarter	0.90		0.90	0.02	0.90	- 0.00
					0.25	3.60	

Door to Door Period	60	Months
Moratorium Period	6	Months
Repayment Period	54	Months

CALCULATION OF D.S.C.R

PARTICULARS	I	II	III	IV	V
CASH ACCRUALS	3.36	4.93	6.59	8.04	9.33
Interest on Term Loan	1.76	1.44	1.04	0.64	0.25
Total	5.12	6.37	7.63	8.68	9.58
REPAYMENT					
Repayment of Term Loan	1.80	3.60	3.60	3.60	3.60
Interest on Term Loan	1.76	1.44	1.04	0.64	0.25
Total	3.56	5.04	4.64	4.24	3.85
DEBT SERVICE COVERAGE RATIO	**1.44**	**1.26**	**1.65**	**2.05**	**2.49**
AVERAGE D.S.C.R.			**1.75**		

COMPUTATION OF SALE

Particulars	I	II	III	IV	V
Op Stock	-	150.00	165.00	180.00	195.00
Production	4,500.00	4,950.00	5,400.00	5,850.00	6,300.00
	4,500.00	5,100.00	5,565.00	6,030.00	6,495.00
Less : Closing Stock(10 Days)	150.00	165.00	180.00	195.00	210.00
Net Sale	4,350.00	4,935.00	5,385.00	5,835.00	6,285.00
Sale Price per Pcs	1,125.00	1,175.00	1,225.00	1,275.00	1,325.00
Sale (in Lacs)	**48.94**	**57.99**	**65.97**	**74.40**	**83.28**

COMPUTATION OF ELECTRICITY

(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		HP	30	
Load Factor			0.7460	
Electricity Charges		per unit	7.50	
Total Working Days			300	
Electricity Charges				4.03
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			0.5	Hour per day
Total no of Hour			150	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			1,200	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			0.78	
Add : Lube Cost @15%			0.12	
Total			**0.90**	
Total cost of Power & Fuel at 100%				4.93
Year		**Capacity**		**Amount**
				(in Lacs)
I		50%		2.46
II		55%		2.71
III		60%		2.96
IV		65%		3.20
V		70%		3.45

PLANT & MACHINERY

PARTICULARS	QTY.	RATE	AMOUNT IN RS.
18 Step corrugation single Layer sheet roll forming machine	1	1,250,000.00	1,250,000.00
Decoiler (5 tons) Capacity	1	450,000.00	450,000.00
Net Amount(Rounded Off)			**1,700,000.00**

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