PRODUCT	:	GALVANISED STEEL WIRE
QUALITY STANDARD	:	IS: 4826 : 1979 IS: 278 : 1978 IS: 279 : 1981
PRODUCTION CAPACITY (PER ANNUM)	:	Qty. : 6140 M.T. Value : 2312.17 Lakhs
MONTH & YEAR OF PREPARATION	:	MARCH 2011
PREPARED BY	:	MSME-Development Institute IV Floor, Harsiddh Chambers Ashram Road Ahmedabad – 380 014

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A. INTRODUCTION :

Mild Steel Galvanised steel wire popularly known as galvanised wire have extensive application in various field. It has got excellent demand in pre-stressed concrete product like railway sleeper, telegraph and telephone, electric pole etc. and also find ample application in pre-casted cement product like pipes, frames of door and windows etc. On the other hand it has its own market in the field of strands and also its domestic demand can not be ignored. The M.S. Wire are drawn to required dia and then galvanised i.e. coating of zinc is employed on it, gives excellent anti corrosion property to steel wire.

B. MARKET:

As discussed above, these products have good demand in various fields. The more and more electrification and expansion of railway network associated with gauge conversion of railway track is expected to create huge market. On other hand the demand in the field of pre-casted cement product and domestic is expected to increase in many folds. Same way expansion of telephone network will also add demand. It is also used in strand which has got market in electrical and railways etc. G.I. Wires is also used in shipping in the form of round strand. Looking into above it has good market potential.

C. BASIS & PRESUMPTION:

1. The production target fixed in the profile i.e. 511.67 M.T./month is well within the reach of 3 shift / day and 25 days/month working.

2. @ 2% M.S. Wire loss. 4 mm Ø average dia of finished product having 98.7 gm/metre, 20 metre out put per minutes per spool product etc. have been considered to arrive to production target and raw material requirement calculation in this profile. The wire of different dia can be manufactured with suggested machines..

3. The rate of machine, equipment, land, building, raw material as well as salary and wages etc. considered in this profile are considered for calculation and likely to very with time and place.

4. @15% interest rate on total capital investment has been considered for calculation purpose which may vary.

5. The Plant and Machinery suggested in this profile can work for three shift also, if so it will reduce production cost.

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D. IMPLEMENTATION SCHEDULE :

Activity			Approx. Time required
1.	Preparation of Project Report	:	4 Weeks
2.	Selection of Site	:	4 Weeks
3.	Various registrations	:	4 Week
4.	Availability of Finance	:	3 to 4 months
5.	Availability of Electric Connection	:	2 Months
6.	Machinery procurement	:	3 Months
7.	Erection & Commission	:	2 Months
8.	Trial Run	:	2 Weeks
8.	Recruitment of labour	:	4 Weeks

Many activity can be initiated simultaneously, hence enter project can be implemented within 12 months.

E. TECHNICAL ASPECT:

(1) Manufacturing Process:

The M.S. Wire rods of 6 mm to 8 mm Ø in coil form purchased is first subject to pickling operation where rust and any other material sticked to it is removed and wire is fluxed. After pickling operation wire is drawn on bull black wire drawing machine to reduce the wire dia to desire specification. The number of passes will depend upon the feed dia and final dia required. Generally in one pass 20% reduction is achieved. The finer dia will be obtained on multistaged wire drawing machine. The drawn wire now will be sent for galvanizing. Here, at first instance wire will be passed through lead bath furnace, where annealing action will be done, followed by wire passing through quenching tank. Then same wire will pass through fluxing tank and finally from zinc furnace where coating of zinc will be done. The speed of wire passing is adjusted to such a way that all operation are done according to need. These speeds will be adjusted by take up machine where galvanized wire will be spool.

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(2) Quality Specification:

BIS has laid down following specifications:

IS 4826 : 1979 Specification for hot dipped galvanised coating on round Steel wire.
IS 429 : 195 Methods for testing weight and uniformity of coatings on galvanized iron and steel wires and steel sheets
IS 278 : 2009Specification for Galvanised Steel Barbed wire
IS 279 : 1981 Galvanised Steel wire for telegraph and telephone purpose
IS 12776 : 2002Galvanized Strand for Earthing

IS 398 : Part 2 :1996 Aluminium conductors for overhead transmission purposes: Part 2 Aluminium conductors, galvanized steel reinforced
IS 398 : Part 5 : 1992 Aluminium conductors for overhead transmission purposes: Part 5 Aluminium conductors - galvanized steel reinforced for extra high voltage (400 kV and above)_
IS 2140 :1978 Specification for Stranded Galvanized Steel Wire for Fencing

(3) Production Capacity (PA):

(a) Quantity : 6140 M.T. Galvanised Wire of different gauge

(b) Value : Rs. 2312.17 lakhs

(4) Motive Power:

Electric Connection of 120 H.P.

(5) Pollution Control:

Galvanized steel wire production needs clearance from Pollution Control Board.

The used picking solution and water needs to neutralise & filtration before discharge

(6) Energy Conservation:

Electricity and furnace oil are the main energy inputs need to optimise its use to reduce the consumption for given production. Every efforts should be made to conserve both energy inputs and in this endeavour, proper instrumentation and recording of data with evaluation of the same periodically can help in great way. Also energy audit prove to be useful to choose the right kind of drive and equipment for required result.

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F. **FINANCIAL ASPECT**:

Land & Building:

Land, 3000 sq. meter @ Rs. 200/- per sq. meter	Rs. 6,00,000
Built up area, 2000 sq. meter @ Rs. 1300/- per sq. meter	Rs. 26,00,000
Total :	Rs. 32,00,000

Machinery & Equipment:

Sr. No.	Description	Qty.(Nos.)	Value (Rs.)
1.	Bull block type heavy duty wire drawing Machine, 750 mm Ø end drum with electric Motor and other accessories etc.	2	4,70,000
2.	Bull Black type heavy duty wire drawing m/c. 600 mm Ø end drum with electric motor and other accessories etc.	2	3,10,000
3.	Multi stage wire drawing m/c. with 4 dia in row electric motor and other accessories etc.	2	3,25,000
4.	Pickling tank – 2m x 8m x 2m	1 Set	1,20,000
5.	Oil fired lead bath furnace 6 m x 1 m x ½ m with 7.5 H.P. Blower and other accessories alongwith water quenching tank etc.	1	5,20,000
6.	Oil fired zinc furnace 3 m x 1 m x ½ m with 5 H.P. Blower and other accessories alongwith fluxing tank etc.	1	6,15,000
7.	Water rinsing tank 2m x 8m x 6m	1	40,000
8.	Pay of stands	26	1,60,000
9.	Take-up m/c. with 12 spooling facility, alongwith electric motor, variable speed and other accessories	1	4,70,000

10.	Testing Equipment		
	(a) Tensile Testing m/c. 10 M.T.	1	2,00,000
	(b) Torsion Tester (c) Resistivity Tester (d) Hot Plate (e) Laboratory Balance (f) Glass Apparatus (g) Micrometer (h) Vernier Calliper (i) Gauges	1 set	1,80,000
11.	Effluent treatment plant consist of Neutralising tank, filtering tank, filter Water cooling etc.	1 set	7,80,000
12.	Air Compressor, 20 HP with accessories etc.	1	80,000
13.	Air Cooled welding m/c., 250 amp. complete with accessories etc.	1	26,000
14.	Over head crane, 2 M.T Capacity along with movement fabrication and other accessories etc.	1	3,00,000
15.	Lathe m/c. 4 feet bed length along with electric motor and other accessories etc.	1	40,000
16.	Drilling m/c. ½" capacity along with electric motor and other accessories etc.	1	9,000
17.	Pedestal grinder	1	12,000
18.	Guide Rollers	L.S.	70,000
19.	Electrification and Installation @ 10%		4,72,700
20.	Office equipment		1,00,000
21.	Pre-operative Expenses		1,00,000

			Total Rs. 53,99,700
			Say Rs. 54,00,000

Fixed Capital

(i)	Land & Building		Rs. 32,00,000
(ii)	Plant & Machinery		Rs. 54,00,000

		Total:	Rs. 86,00,000

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Working Capital

Personnel (P.M.)

1.	Manager/Metallurgist	1	15000	15000
2.	Supervisor	6	8000	48000
3.	Quality Control Inspector	3	8000	24,000
4.	Lab. Technician	3	7000	21,000
5.	Skilled Workers	24	6000	144000
6.	Unskilled Workers	30	4000	1,20,000
7.	Accountant	1	7000	7,000
8.	Clerk/Store Keeper	3	5000	15,000
9.	Watchman	3	4000	12,000
			Total:	4,06,000
	(+) Perquisites @ 15%			60,900
			Total:	4,66,900

Raw material (P. M)

M.S. Wire rod of 6 mm to 8 mm Ǿ 522.17 M.T. @ Rs. 26000		Rs. 1,35,75,900
Lead M.T. 2.55 @ Rs. 59000/- per M.T.		Rs. 1,50,450
Zinc M.T. 25.5 @ Rs. 45000/- per M.T.		Rs. 11,47,500
Misc. Material like charcoal , oil, Asbestos, Pickling material etc. @ Rs. 700/- per M.T.		Rs. 3,65,505
Furnace oil K.L. 51 @ Rs. 17000		Rs. 8,67,000
	Total:	Rs. 1,61,06,305

Utility (P.M)

Electricity 32000 kwh @ Rs. 5.50/kwh		Rs. 1,76,000
Water	L.S.	Rs. 15,000
	Total:	Rs. 1,91,000

Other Contingent Expenses (P.M)

Repair & Maintenance		Rs. 30,000
Postage and stationery		Rs. 4,000
Consumable Stores		Rs. 12,000
Telephone		Rs. 5,000
Transportation		Rs. 1,20,000
Sales Expenses		Rs. 30,000
Insurance		Rs. 2,000
Miscellaneous Expenses		Rs. 10,000
	Total :	Rs. 2,13,000

Total Working Capital Requirement (P.M) Rs. 1,69,77,255
Say Rs. 1,69,77,000

Working Capital Requirement on Three Months Basis

Rs. 5,09,31,000

Total Capital Investment

Fixed Capital		Rs. 86,00,000
Working Capital		Rs. 5,09,31,000
	Total:	Rs. 5,95,31,000

G. MACHINERY UTILISATION:

The suggested Machinery are capable to produce 6140 M.T. finished galvanised wire of 4 mm Ø on Three shift / day and 25 days per month working, provided due attendance is given on Galvanising operation

H. FIANCIAL ANALYSIS:

Cost of Production per year (P.A)

Total recurring cost		Rs. 20,37,24,000
Depreciation on Furnace @ 25%		Rs. 2,83,750
Depreciation on Testing equipment @ 20%		Rs. 76,000
Depreciation on Guiding rollers @ 25%		Rs. 17,500
Depreciation on other machinery @ 10%		Rs. 3,14,200
Depreciation on Office equipment @ 20%		Rs. 20,000
Interest on total Capital investment @ 15%		Rs. 89,29,650
	Total:	Rs. 21,33,65,100
	Or Say	Rs. 21,33,65,000

Turn over (P.A.):

1.	By sale of M.S. Galvanised Steel Wire of different gauges – 6140 M.T. @ Rs. 37500/M.T.	Rs. 23,02,50,000
2.	Sale of zinc dross 16 M.T. @ Rs. 60 per Kg.	Rs. 9,60,000
3.	Sale of Lead Ash 0.64 MT @ Rs. 12/kg	Rs. 7,680
	Total:	Rs. 23,12,17,680

Net Profit (P.A.)

Turn over	-	Cost of production	=	Rs. 1,78,52,580
		Say		Rs. 1,78,53,000

Net Profit Ratio = Net Profit x 100 / Turn Over = 7.72%

Rate of Return = Net Profit x 100 / Capital Investment = 29.98%

Break-even Point

(i) Fixed Cost

(a)	Total Depreciation	Rs. 7,11,450
(b)	Interest on Capital Investment	Rs. 89,29,650
(c)	Insurance	Rs. 24,000
(d)	40% of Salary and Wages	Rs. 22,41,120
(e)	40% of other contingent expenses (excluding Insurance)	Rs. 10,12,800
	Total:	Rs. 1,29,19,020

B.E.P. % = F C x 100 / F C + Profit = 41.98%

NAME & ADDRESS OF MACHINERY SUPPLIERS

1. M/s. Associated Machinery Corpn. Ltd.
   F-64, Site No. 1, Bulandshahar Road
   Industrial Area, Ghaziabad (U.P) – 201001

2. M/s. Precision Machinery Mfg. Co.
   Plot No. 56, Vishwakarma Industrial Complex
   Mujesar, Faridabad

3. M/s. ACE Thermal Technologies Pvt. Ltd.
   Pokar Mansion, 3rd Floor, Chembur, Gandhi Road
   Chembur, Mumbai – 400 007

4. Indian Engineers Pvt. Ltd.
   C-22 & 23 Industrial Plot, Magappair West
   CHENNAI – 600 058

5. M/s. Nobel Refractories
   8-A National Highway, P.O. Box No. 202,
   Hasanpura, Wankaner – 363 622

6. M/s. Versatile Equipment Pvt. Ltd.
MIDC Area, Gokulshirgaom, Kolhapur – 416 234

7. M/s. Fire Spray Associates & Engineers Pvt. Ltd.
C-45/2 MIDC Area, Miraj – 416 410

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