

HDPE PIPES

1. INTRODUCTION

High Density Polyethylene (HDPE) Pipes are manufactured all over the world by extrusion technique. Sizing methods still vary but the trend is the pressure sizing i.e. introducing air at the pressure of about 0.8 kg/cm² to 1 kg/cm² through one of the spider legs of the dies. HDPE Pipes are generally manufactured on single screw extruder.

HDPE Pipes find application in a variety of fields in India and abroad. The most important applications are as follows:

- Drinking water supply line
- Water lines in hilly areas. Here the property of flexibility of HDPE is exploited to the fullest extent
- Irrigation lines
- Industrial effluent disposal lines
- Sewage and gas lines
- Fuel gas line
- Mining Industry

2. PRODUCTS AND ITS APPLICATION

HDPE pipes are used in various applications such as:

Sewage pumping mains, Fire mains, Chilled water, Submarine pipe lines, Industrial and chemical applications and HDPE pipes can carry potable water, wastewater, slurries, chemicals, hazardous wastes, and compressed gases. In fact, polyethylene pipe has a long and distinguished history of service to the gas, oil, mining and other industries. It

has the lowest repair frequency per mile of pipe per year compared with all other pressure pipe materials used for urban gas distribution. Polyethylene is strong, extremely tough and very durable.

3. DESIRED QUALIFICATION FOR PROMOTER

The Promoter should have preferably a basic degree in plastic engineering/ processing or a degree/ diploma in engineering / or a degree in chemistry. Experience of at least two to three years in plastic industry is desirable.

4. INDUSTRY OUTLOOK AND TRENDS

The industrial outlook for this sub segment of plastic processing industry is very bright. Considering the growth of industry such as water supply, adornment treatment, liquid and gaseous chemical products, etc. the demand for HDP pipes has been increasing from these applications, both within the country and abroad. The production trend shows a steady growth of more than 15%. New segments of applications are contributing towards encouraging trends for the industry.

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY

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6. RAW MATERIAL REQUIREMENTS

HDPE Granules

7. MANUFACTURING PROCESS

HDPE granules are fed into the hopper of the extruder which goes into the heated cylinder of the extruder, where the granules melt and are conveyed (pumped) to the die exit. Now the melt passes through the die and takes the shape of the die i.e. circular shape and emerges from the exit of the die. It then passes through the calibrator and is forced to take the shape of the inside of the calibrator which is round in diameter by the inside air pressure. This melt solidifies and taken round shape in the calibrator, which is cooled by passing chilled water through it continuously.

Now the solid pipe is taken out from the water and is drawn continuously from the die. The speed is adjusted according to the thickness of the pipe required and extruder output. The pipes is either cut into 5 meters length or wound on the winder unit. Generally pipes up to 110 mm diameter can be made on this extruder.

8. MANPOWER REQUIREMENT

Sr. No.	Particulars	Nos.	Salary Per Month
1	Production Engineer/Manager	1	15000
2	Sales Executive	1	10000
3	Accountant	1	10000
4	Store Keeper	1	8000
5	Watchman	2	14000
6	Supervisor	2	16000
7	Chemist	1	12000
8	Skilled Workers	4	32000
9	Helpers	3	18000
	Total	16	135000

9. IMPLEMENTATION SCHEDULE

The estimated time required for implementing the project would be approximately 10-12 months

Sr. No.	Particulars	Time
1	preparation of Project report	Two months
2	Sanction of loan	Three months
3	Selection of Site	One month
4	Completion of registration and other formalities	One month
5	Machinery procurement, erection and Installation	Four months
6	Trial production and commissioning	One month

10. COST OF PROJECT

Sr. No	Particulars	Rs. In Lakhs
1	Land & Building	35
2	Plant & Machinery	38.75
3	Other Misc. assets	8.75
4	Pre-Operative expenses	3.5
5	Margin for WC	25.101
	Total	111.101

11. MEANS OF FINANCE

Sr. No.	Particulars	Rs. (lakhs)
1	Promoter's contribution	33.3303
2	Bank Finance	77.7707
3	Total	111.101

12. WORKING CAPITAL CALCULATION

Sr. No.	Particulars	Rs. lakhs	Stock Period days	Promoter Margin	Margin Amt.	Bank Finance
1	Salaries and wages	1.35	30	1	1.26	-
2	Raw material and packaging material	21.56	30	0.5	10.78	10.78
3	Utilities	0.25	30	0.5	0.125	0.125
4	Debtors	32.34	30	0.4	12.936	19.404
	Total	55.5			25.101	

13. LIST OF MACHINERY REQUIRED

Sr. No	Particulars	Rs in Lakhs
1	Complete HDPE Pipe Plant	30
2	Cooling Tower	2.5
3	Scrap Grinder	1.75
4	Testing Equipment & Other Accessories	4.5
	Total	38.75

There is large number of suppliers manufacturing extruder machines which is a key equipment required for the project. HDP pipe plants are manufactured by companies like Klockner Vincor, Remika Plastics, etc.

14. PROFITABILITY CALCULATIONS

Sr. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
(A)	Sales Realization per annum	34489728	39416832	44343936	44343936	44343936
(B)	Cost of Production					
1	Raw material per annum	27095040	30965760	34836480	34836480	34836480
2	Utilities	551040	629760	708480	708480	708480
3	Salaries	1872000	2021760	2171520	2321280	2471040
4	Repairs and maintenance	350000	400000	450000	500000	550000
5	Selling expenses (3% on sales value)	1034691.84	1182505	1330318.08	1330318.08	1330318.1
6	Administrative Expenses (other expenses)	620000	640000	660000	680000	700000
	Total	31522771.8	35839785	40156798.08	40376558.08	40596318

Sr. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
(C)	Profit before interest & depreciation	2966956.16	3577047	4187137.92	3967377.92	3747617.9
	depreciation	1106250	1106250	1106250	1106250	1106250
	Profit Before term loan and tax	1860706.16	2470797	3080887.92	2861127.92	2641367.9
	Interest on term loan (11%)	824917.5	733260	611050	488840	366630
	Profit before tax	1035788.66	1737537	2469837.92	2372287.92	2274737.9
	Tax (30%)	310736.598	521261.1	740951.376	711686.376	682421.38
	Total Profit	725052.062	1216276	1728886.544	1660601.544	1592316.5

15.BREAKEVEN ANALYSIS

Fixed Cost (FC):	Rs. In lakhs
Wages & Salaries	18.72
Repairs & Maintenance	3.5
Depreciation	11.06
Admin. & General expenses	6.2
Interest on Term Loan	8.25
Total	39.48

Fixed Cost: 39.48

Profit After Tax: 7.25

$$\text{BEP} = \text{FC} \times 100 / \text{FC} + \text{P}$$

$$39.48 / 46.73 \times 70 / 100 \times 100$$

59.14%

16. STATUTORY/GOVERNMENT APPROVALS

There is no specific statutory requirement for plastic industry process. However, MSME registration various taxation related registration and labour law related compliances have to be ensured. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

17. BACKWARD & FORWARD LINKAGES

There are no specific backward or forward linkages related techno-economic advantages or synergies for this type of project. However, in future after achieving certain growth entrepreneur may consider backward linkage.

18. TRAINING CENTRE AND COURSES:

There are number of institutions providing facilities and training courses on production/marketing for the proposed project. These are Central Institute of Plastic Engineering and Technology (CIPET), Indian Institute of Packaging Management (IIPM), Plastic and Rubber Institute (PRI), Indo German Tool Room (IGTR), etc. Udyamimitra portal (link : www.udyamimitra.in) can also be accessed for handholding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc.

Disclaimer:

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.