

WOVEN SACKS FOR FERTILIZERS

Introduction:

High density polyethylene of HDPE woven sacks have become a versatile commodity in the packaging industry. Introduced for the first time in India during the year 1969 it has over the years replaced the conventional jute bags to a large extent. HDPE sacks have an edge over the conventional jute sacks in the sense that the former are light in weight, strong and attractive. These sacks are immune to the effect of corrosion, decay, moisture, atmosphere, rats, rodents, moths and insects. Being superior in quality and economic to the traditional jute material, these modern sacks have gradually captured a large market for packing fertilizers, chemicals, food stuffs, animal foods, oil cakes etc. Sacks made of HDPE are laminated with low density polyethylene inside it. This gives protection against moisture, air and the material packed cannot penetrate out of the sack.

Market Potential:

The primary requirement of sacking in India is for packaging of fertilizers, pesticides, chemicals, oil seeds and good grains. The total demand at present is estimated to be around 3000 million sacks per annum. The current sales of HDPE resins for woven sacks is around 20,000 M.T.A. or approximately 154 million sacks. For jute sacking the sales is around 12 lakh tones per annum or 2460million sacks. This still leaves a deficit of about 400 million sacks. Therefore, HDPE sacks rather than competing with jute sacks would on the contrary supplement the existing deficit in sacks.

The main consumer for HDPE woven sacks in the N.E. Region at present is the Hindustan Fertilizer Corporation Ltd., (HFC), Namrup. The HFC (Stage-I, II & III) has at present an installed capacity of around 10,00,000 tonnes of Urea and Ammonia Sulphate per annum. On an average the actual production works out to about 80% of the installed capacity or to about 8,00,000 tonnes of Ammoniam Sulphate and Urea per annum. The fertilizer produce is packed in bags or sacks in the quantity of 50 Kgs. or 0.05 tonnes per bag or sack. On this basis the total requirement of bags or sacks is 160,00,000 Nos. per annum. Out of this requirement more than 50% (80,00,000 Nos.) is HDPE woven sacks.

At present there is no unit manufacturing laminated HDPE woven sacks in Assam or in any part of the N.E. Region. As a result the full requirement of laminated HDPE woven sacks are supplied by manufacturer's from outside the state and region. Thus 2 - 3 Nos. of laminated HDPE woven sacks manufacturing units can come up preferably in the states of Assam and Nagaland.

Plant Capacity:

The production basis for a typical tiny unit would be as under:

Working hours/day	: 8 (1 shift)
Working days in a year	: 300
Annual Production capacity	: 7,00,000 Nos.of laminated HDPE woven sacks.

The unit has been assumed to operate at 70%, 80% and 90% of its installed capacity in the first, second and third year and onwards of its operation.

Raw Material:

The main raw material required for manufacturing laminated HDPE woven sacks is HDPE of GF – 7745 F grades. The other chemicals required are LDPE (18 LA 060 grade) and colour for printing. LDPE is used in the laminating process or in the extraction coating process in providing a lining of LDPE to the woven material. The colour is utilized in printing the name of the unit etc. whose product is to be packed. The annual requirement of HDPE, LDPE and colour at 100% capacity utilization is as follows:

HDPE	:	80,000 Kg.
LDPE	:	23,000 Kg.
Colour	:	Rs. 0.50 per Kg. HDPE requirement.

The major manufacturer of HDPE in the country is M/s Polyolefins Industries Ltd. (PIL), Neville House, Graham Road, Mumbai – 400 001. At present Hoechst Dyes & Chemicals Ltd., Hoechst House, Nariman Point, Mumbai – 400 021 is marketing HDPE, throughout the country through their branch offices at Kolkata, Ahmedabad, Mumbai and New Delhi. LDPE is currently being marketed by the Indian Petrochemicals Corporation Ltd. (IPCL), Baroda through its distributors or authorized agents at Guwahati. Colour is available in major towns of the region.

Process:

The process of manufacture of laminated HDPE woven sacks involves four major operations which maintain continuity from the raw material or HDPE granules stage to the finished product stage. These operations or processes are as follows:

- Production of mono-axially oriented high density polyethylene tapes in the extruder and auxiliary equipment.
- Processing of the tapes thus produced in textile equipment and machinery to obtain the woven material or fabric.
- Extrusion coating/laminating the out coming woven material with low density polyethylene in the extrusion coating/laminating plant.
- Cutting and stitching the laminated woven material into the required sizes and finally printing the name, trade mark etc. of the agency whose product is to be packed on the sack to obtain the final or finished product.

Machinery:

The major equipment required by the unit for producing the aforesaid HDPE woven sacks are as follows:

Sl.No.	Particulars
1.	One complete extruder with following accessories: (a) die set (b) air cooling rings (c) air compressor (d) air blower (e) vertical take off tower (f) side slitting unit (g) one septa stands (h) stretching oven (i) stabilizing oven (j) trio stand (k) scrap drum unit (l) equipment control cabinet and (m) 40 station cheese winder.
2.	One extrusion lamination plant with the following accessories: (a) Extruder and control cabinet, (b) Die and die adopter (c) Coating laminating unit and (d) Chilling plant.
3.	Textile equipment consisting of the following: (a) One firm winder (b) one wrapping machine (c) 12 Automatic loom (56" reed space) (d) 1200 bobbins and (e) spares.
4.	Stitching & Printing Equipment consisting of the following: (a) three bag making machines (b) one printing machine (c) one treating machine and (d) one cutting and sealing machine.

Location:

The suitable locations for the project may be –

- Guwahati, Dibrugarh in Assam.
- Dimapur in Nagaland.
- Dist. H. Q in Sikkim

Infrastructure:

The basic infrastructure required are :

Land	:	20,000 sq.ft.
Building	:	10,000 sq.ft.
Power	:	200 KW
Water	:	5,000 Ltr. Per day.
Manpower	:	35 Nos. (Administrative (5), Factory Staff (30),

Total Capital Requirement:

The total capital requirement including fixed capital and working capital is estimated at Rs 46.10 lakhs as follows. Of this, the project cost comprising fixed capital and margin money on working capital is Rs 42.70 lakhs.

A. Fixed Capital:		(Rs in lakh)	
Land			1.50
Building			6.50
Machinery			26.00
Miscellaneous fixed assets			4.50
Preliminary and pre-operative expenses			<u>2.00</u>
	Total (A)	40.50	=====
B. Working Capital:			
Raw materials & Packing material	1 month		2.20
Finished goods	2 weeks		1.75
Working expenses	1 month		0.60
Receivables	1 week		<u>1.10</u>
	Total (B)	5.65	=====
	Total (A)+(B)	46.10	

Note: Working capital may be financed as:

Bank Finance	Rs 3.45 lakhs
Margin Money	<u>Rs 2.20 lakhs</u>
		Rs 5.65 lakhs
		=====

Means of Finance:

The project cost of Rs 42.70 lakhs including margin money for working capital may be financed as under:

Promoter's contribution (35%)	Rs 15.00 lakhs
Term Loan (65%)	<u>Rs 27.70 lakhs</u>
		Rs 42.70 lakhs
		=====

Operating Expenses:

The annual operating expenses are estimated at Rs 39.45 lakhs (70% capacity utilization) as given below:

		(Rs in lakhs)	
1.	Raw materials		26.40
2.	Utilities		1.00
3.	Wages & Salaries		4.25
4.	Overheads		0.60
5.	Selling expenses @ 2.5% on annual sales		0.80
6.	Interest on term loan (14%)		3.90
7.	Interest on Bank Finance for Working Capital (12.75%)		0.40
8.	Depreciation @10%		<u>2.60</u>
			39.45
			=====

Sales Realization:

The basis on which average ex-factory sales realization from the sale of Laminated HDPE woven sacks (7.00,000 Nos.) at 100% capacity utilization is as follows:

Items	Unit Sales Price (Rs)	Annual Sales Price (Rs)
Laminated HDPE woven sacks	10/-	70,00,000

Based on this the annual sales realization is estimated to be Rs 70.00 lakhs and at 70% capacity utilization the same is Rs 49.00 lakhs.

Profitability :

Based on the sales realization and the operating expenses, the profit would be Rs 9.55 lakhs per year (70% capacity utilization). This works out to a return on investment of 23%. The plant will break even at 43% of the rated capacity.

Highlight:

The major highlights of the project are as follows:

Total capital requirement	:	Rs 46.10 lakhs
Promoter's contribution	:	Rs 15.00 lakhs
Annual sales realization (70% cap.)	:	Rs 49.00 lakhs
Annual operating expenses (70% cap.)	:	Rs 39.45 lakhs
Annual profit (pre-tax)	:	Rs 9.55 lakhs
Pre-tax Return on Sales	:	21%
Break Even Point	:	43%
No.of persons employed	:	35

List of Machinery Suppliers:**List of Raw Materials Suppliers:**

1.	M/s Brimco Plastic Machinery Pvt. Ltd., "Brimco House", 55, Govt. Industrial Estate, Charkop, Kandivili (West), Mumbai- 400067: for Extruders.	1.	M/s Hoechst Dues and Chemicals Ltd., Hoechst House, 193, Backbay Reclamation, Nariman Point, Mumbai-400021: for HDPE.
2.	M/s Sunrise Industries, 5 th Main Road, Post Box No. 2105, Srirampuram, Bangalore -560021 for Firm Winder machinery.	2.	M/s Indian Petrochemical Corporation Ltd., Badodara, Gujrat: for LDPE
3.	M/s Technopack Engg.Co., C-105m Industrial Estate, Rajajinagar, Bangalore- 560044 for printing, cutting & sealing machine.		
4.	M/s. Shah & Co., Chria Bazaar, Girgaum Road, Mumbai – 400002 for Stitching machine.		