

Multilayer Film

Product Code	303999004
Quality and Standards	As per buyer's specification
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Introduction

Three layer blown film extrusion (also known as blow film co-extrusion) is a process of simultaneously extruding in molten stage three polymers which adhere to each other through a common die to form an integral film of unique strength and barrier properties. The selection of layers depends upon end properties required as well as items to be packed. Some combinations of layers are as under

Sl. No.	Combination	Application
1	LL/LD/LL	Heavy-duty bags
2	LL/HD/LL	Industrial base food oil, backed confectionery, dry vegetables, dry unit, hydrogenated oil, lube oil
3	LD/SCRAP/LD	Garbage bags.
4	HD/LD/LD	Industrial base food oil, backed confectionery, dry vegetables, dry unit, and hydrogenated oil, lube oil
5	HD/LL/Primacor	Oil packaging.

This project is based on the combination of LLDE/LDPE/LLDPE layer which produces the heavy duty bags.

Market Potential

Now-a-days the Three Layers Coextruded blown film is playing a major role in the packaging industry. It is replacing the conventional packing materials like paper, aluminium foil, tin, glass etc. These films are considered for packing purpose because of specific requirement of self-life and protection to product. The other advantages are excellent resistance to puncturing, heat sealability, gas barrier, high mechanical property high bursting strength etc. Due to these properties these films are having very good scope for packaging.

Basis and Presumptions

- The efficiency of the unit is calculated at 80% of the total production capacity. The unit will work 25 days in a month on three shifts of 20 hrs. basis and 300 days in a year i.e. 6000 hrs. per year.
- The time period for achieving the full envisaged capacity utilization is one year.
- The labour wages are as per the prevailing rates in the market.
- The rate of interest for fixed and working capital is taken @ 14%.
- The margin money requirement for this project is 25%.
- The pay back period of this project is 5 years.
- The land area is 500 sq. meters and the constructed area is 250 sq. meters.

Implementation Schedule

The time required for preparation of project report	Two months
Time required for selection of site	One month
Time required for registration as small-scale unit	One week
Time required for acquiring the loan	Three months
Machinery procurement, erection and commissioning	Two months
Recruitment of labours etc.	One month
Trial runs	One month

Technical Aspects

Process of Manufacture

Raw materials are fed into the hopper, which gets heated in the barrel with the help of the heater. The melt in the extruders is conveyed forward by the screw rotation. The three extruders individually feed the three channels within the die. All the flow channels converge into a single flow channel, just a little distance before the material is blown out from the annular die orifice. The rotating die ensures even distribution of the melt flow while coming out of the die orifice. The rotating die ensures even distribution of the melt flow while coming out of the die office. The bubble is cooled by means of air circulation arrangements. The predetermined size of the blown film is obtained by inserting compressed air through the die. Iris rings, fluttering boards, counter rotating nil rolls draw the film upwards and flatten it into a two layer lay flat film, which is wound on the winder. The film is also treated with corona discharge equipment and then printed on flexography or rotogravure printing machine in desired colours.

Quality Control and Standards

IS10141: 1982/1997 or as per customer's specification.

Production Capacity (per annum)

Quantity	630 MT
Value	

Motive Power

The total connected load of the unit is 150 kWh. On Assuming 60% utilization of the connected load.

Pollution Control

This unit has not been identified as the pollution making industry. However, proper ventilation of the working shed may be assured.

Energy Conservation

Production by proper planning may save the energy.

Financial Aspects

Fixed Capital

(i) Land and Building

	Area sq. mtrs.	Rate Rs/ sq. mtrs.	Value (Rs.)
Land	500	2500	1250000
Working shed	250	5000	1250000
Office and Stores	100	5000	500000
Total			3000000

(ii) Machinery and Equipments

Description	Qty. (Nos.)	Value (Rs.)
Production Unit	1	4000000
Three layer co-extrusion blown film plant with three single screw 47 mm extruder and accessories.		
Corona surface treatment plant	1	250000
Three/four colour Rota Gravure Printing Machine	1	700000
Sliter-cum-regrinder machine	1	150000
Testing equipment	LS	60000
Electrification and Installation charges @ 10% of cost of machinery and equipment.		516000
Total cost of Machinery and equipment		5676000
Cost of office equipment/ working Table etc.		80000
Total		5756000
Pre-operative Expenses	25000	
(Project cost, non-refundable deposits) Total fixed capital (i+ii+iii)	8781000	

B. Working Capital (per month)

(i) Personnel

Designation	No.	Salary (Rs.)	Total (Rs.)
Manager	1	15000	15000
Machine Operator	2	8000	16000
Skilled Workers	3	5000	15000
Clerk-cum-accountant	1	5000	5000
Unskilled Workers	3	3000	9000
Peon	1	3000	3000
Total			63000

Perquisites @ 22% of Salaries			13860
Total			76860
or Say			77000

(ii) Raw Materials Including Packaging Requirement (per month)

Particulars	Qty.	Rate/ Kg.	Value (Rs.)
LDPE/LLDPE	52,500	78	4095000
Printing Ink			60000
Packing Material			8000
Total			4163000

(iii) Utilities (per month)

	(Rs.)
Power 96 kw × 500 hrs. × Rs. 4 × 0.6 utilization	115200
Fuel	15,000
Water	2000
Total	117200

(iv) Other Contingent Expenses (per month)

Particulars	(Rs.)
Postage/Stationery	10000
Telephone	2000
Consumable Store	2000
Repair and Maintenance	5000
Transportation Charges	20000
Advertisement and Publicity	10000
Insurance	5000
Total	54000

	(Rs.)
Staff and labour	77000
Raw material	4163000
Utilities	117200
Other Contingent Expenses	54000
Total	4411200
Total Recurring Expenditure of 2 Months	8822400

C. Total Capital Investment

Fixed capital	8781000
Working capital	8822400
Total	17603400

Machinery Utilization

Co-extrusion process will be the bottleneck operation for this project. The production capacity is 105 kgs. per hour.

Financial Analysis

Cost of Production (per annum)	(Rs)
Total recurring cost	52934400
Depreciation on building @ 5 %	87500
Depreciation on machineries @ 10%	567600
Depreciation on office equipment @ 20%	16000
Interest on total Capital investment @ 14%	2464476
or Say	56070000

Turnover (per year)

Item	Qty. MT	Rate per Kg.	Value (Rs.)
Co-extruded two-layer film	617	105000	64785000
Scrap	13	26000	338000
Total			65123000

Net Profit (per year)

Turnover (Rs.)	Cost of Production (Rs.)	Profit (Rs.)
65123000	56070000	9053000

Net Profit Ratio

	$\frac{\text{Net profit per year}}{\text{Turnover}} \times 100$
	$\frac{9053000}{65123000} \times 100$
	= 13.90%
	29.2%

Net Profit Ratio

	$\frac{\text{Net profit per year}}{\text{Total investment}} \times 100$
	$\frac{9053000}{17603400} \times 100$
	= 51.43%
	51.43%

Break-even Point (% of Total Production Envisaged)

Fixed Cost	(Rs)
Depreciation on machinery and equipment	567600
Depreciation on office equipment	16000
Depreciation on Building @ 5 %	87500
Interest on total capital investment	2464476
Insurance	60000
40% of salary and wages	30800
40% of other contingent expenses excluding insurance	19600
Total	3245976
or Say	3246000
B.E.P	$\frac{\text{Fixed cost}}{\text{Fixed cost} + \text{profit}} \times 100$
	$\frac{3246000}{3246000 + 9053000} \times 100$
	3246000×100
	12299000
	26.39 %

Addresses of Machinery and Equipment Suppliers

Co-extrusion Blown Film Plant

- M/s. Klockner Windsor India Ltd.
5403, G.I.D.C. Industrial Estate,
Phase IV, Vatva,
Ahmedabad-382445
- M/s. Boolani Engineering Corporation
Prabhadevi Industrial Estate,

403, Veer Savarkar Marg,
Mumbai-400025 (Maharashtra)

- M/s. Kolsite Machine Febrk Ltd.
P. O. Box 7368,
Veera Desai Road,
Mumbai-400058 (Maharashtra)
- M/s. Brimco Plastic Machinery Pvt. Ltd.
Brimco House, Plot No. 55,
Govt. Industrial Estate,
Charcop, Kandivli West,
Mumbai-400067, (Maharashtra)

Carona Surface Treatment Plant

- M/s. Kohli Industries
6, New Office Bldg.,
Sona Panchayat Road,
Andheri East,
Mumbai.
- M/s. Industrial Electronics Pvt. Ltd.
19-21, Ambalal Doshi Marg, Fort,
Mumbai-400023

Rotogravure Printing Machinery

- M/s. Big Ban Engineering Works
4, Sadi Bazar,
171, Maulana Azad Road,
Madanpura,
Mumbai-400008
- M/s. Print and Paper Sales Pvt. Ltd.
Post Box No. 394,
4/7, A Waterloo Street,
Kolkata-700069

Slitter-Cum-Rewinder

- M/s. Print and Paper Sales Pvt. Ltd.
Post Box No. 394,
4/7, A, Waterloo Street,
Kolkata-700069
- M/s. Arshed Electronics Pvt. Ltd.
305, Hammer Smith Ind. Estate,
Shitla Devi Temple Road,
Mahim, Mumbai-400016

Addresses of Raw Material Suppliers

- M/s. Indian Petro-Chemicals Corp. Ltd.
Post Office- Petro-Chemicals,
Distt. Vadodara-391346
- M/s. Union Carbide India Ltd.
Chemical and Plastic Division,
15, Mathew Road,
Mumbai-400004
- M/s. Alkali and Chemicals Corporation of India Ltd.
34, Chowringhee Road,
Kolkata-700021
- M/s. Bindal Agro Chem Ltd.
12th Floor, Gopala Tower,
25, Rajendra Place,
New Delhi-110008
- M/s. Polyolefins Industries Ltd.
Mafatlal Centre,
Nariman Point,
Mumbai-400021.