

HDPE LAMINATED COLLAPSIBLE TUBES

1. INTRODUCTION

A typical Lamitube is a 5 layer structure with aluminium foil in the middle layer and polyethylene as an inner and outer layer. The Aluminium foil layer is bonded with polyethylene using adhesive/tie layer.

A lamitube is made using a 5-ply structure with overall thickness ranging from 210 to 290 micron based on the final application. The film is printed and slit to the required tube diameter generally ranging from (22mm-35mm) and converted into a Sleeve by sealing online. The Sleeve is then moved over a conveyor and goes to the molding station where the Shoulder (HDPE) of the tube is formed. The tube now moves over the conveyor and goes to the automatic capping machine where the cap (PP) is fitted. The finished tube is packed to FMCG companies for packaging.

Outer layer – The outer layer is 3 layer structure with PP in the middle layer and inner outer is a LLD-LD blend.

Inner layer – is a critical layer as it is in contact with the end product and is the sealing layer.

Lamitube are generally available in diameters ranging from 22 mm to 35 mm and tube lengths of 125 mm, 150 mm and 170 mm.

2. MARKET POTENTIAL

Lamitubes are widely used for packing of creams, tooth pastes, gels, viscous, ointment etc. These lami tubes have totally replaced the Aluminium Collapsible tubes. The demand for these product is increasing in view of new facial cream and other type of creams being developed by

the Multi National Companies. In view of the increase in population, and growing demand for creams, ointment etc., the demand will be increasing 10 to 15% every year.

3. BASIS & PRESUMPTIONS

- (i) The output capacity is taken as 100 Kgs/hr. The unit will work at 20 hrs. per day for 25 working days in a month and 300 days in a year. The output capacity may vary from machinery to machinery and the cost of machinery may also vary from supplier to supplier.
- (ii) The time period for achieving the full envisaged capacity utilisation is six months
- (iii) The labour wages are as per the prevailing rates in the market
- (iv) The rate of interest for fixed and working capital is taken as 12 per cent
- (v) The margin money requirement for this project is 30 per cent
- (vi) The pay back period of this project is 5 years
- (vii) The rate of land is taken @ Rs. 500/-per sq. mtr. and construction charges are taken @ Rs. 3500 per sq. mtr. This may also vary from place to place.
- (viii) The present profile has to be updated taking into prevailing cost of land, building, machinery etc. at the time of implementation of the project

4. IMPLEMENTATION SCHEDULE

The Time requirement for preparation of Project report : Two months

Time requirement for selection of Site : One month

Time required for registration as Small Scale Unit : One Week

| | |
|-----------------------------------------------------|--------------|
| Time required for acquiring the loan | |
| Machinery procurement, erection and commissioning : | Three months |
| Recruitment of labourer etc. | : One month |
| Trial runs | : One month |

5. **TECHNICAL ASPECT**

MANUFACTURING PROCESS

1. The web material on receipt is slit into reels – the width being equal to the length.
2. The slit reels can be printed upto 6 colours in reel form with attractive designs. It is also possible to rotogravure print the web and apply in LDPE overcoat to bury the print.

24

3. The printed web is fed onto tube making machine. This forms the body of the tube and welds the injection-moulded shoulder in place. This process must be done in an air conditioned room and dust free production area.
4. The tube is then tapped for delivery to clients.
5. Filling and sealing-Conventional filling equipment used for filling aluminium tubes can also be used for Lamitubes. However the machines need to be modified by removal of the crimping station which would have to be replaced by ultrasonic or high frequency sealing and trimming/cooling station.

6. **QUALITY & STANDARD**

The Laminated Collapsible Tubes are manufactured as per customers' specification

7. **PRODUCTION CAPACITY** (Per Annum)

- (a) Quantity (M.T.) : 600
- (b) Value (Rs.) : 5,70,00,000.00

8. TOTAL POWER REQUIREMENT

Total connected load (KW) : 100

9. POLLUTION CONTROL MEASURES

The unit does not create any pollution. However, a proper ventilation should be made in the processing area for the better circulation of the fresh air.

10. ENERGY CONSERVATION

Entrepreneurs may select energy efficient machinery and proper planning has also to be made for saving energy in the unit.

11. FINANCIAL ASPECT

A. FIXED CAPITAL

| i) <u>LAND & BUILDING:</u> | | Area sq. mtrs. | Rate Rs. per Sq. mtr. |
|--------------------------------|----------|----------------|-----------------------|
| (Rs.) Land | | 300 | 500.00 |
| 1,50,000.00 | Building | 100 | 3500.00 |
| 3,50,000.00 | | | |

5,00,000.00

Total :

25

ii) MACHINERY & EQUIPMENT

| (Rs.) | <u>Sr. No.</u> | <u>Description of machines</u> | <u>Qty. (Nos.)</u> |
|-------|----------------|--------------------------------|--------------------|
|-------|----------------|--------------------------------|--------------------|

(a) Production Unit

- i) Extrusion Blown Film Plant
- 26,00,000.00

| | |
|--------------------------------------------------------------|----------------|
| ii) Extrusion Coating Plant | 18,75,000.00 |
| iii) Lamination Plant | 18,00,000.00 |
| iv) Printing Machine | 15,00,000.00 |
| v) Laminated Tube body making machine | |
| | 10,00,000.00 |
| vi) Solder Moulding Machine | |
| | 1,00,000.00 |
| vii) Tumble Mixer & Grinder | |
| | 50,000.00 |
| vii) Plastic Crusher | |
| | 25,000.00 |
| v) Filling & Sealing Machine | |
| | 25,000.00 |
| vi) Capping Machine | 25,000.00 |
| (b) Testing Equipment & Other Accessories | |
| | 50,000.00 |
| (c) Electrification & Installation @ 10% of cost & machinery | |
| | 9,05,000.00 |
| (a) & (b) | |
| (d) Pre-operative expenses | |
| | 50,000.00 |
| | ----- |
| Total cost of machinery & equipment (a to d) | |
| | 1,00,05,000.00 |
| | ----- |
| (e) Cost of Moulds & Dies | |
| | 1,00,000.00 |
| (f) Cost of Office Equipment/Furniture/Computers etc. | |
| | 3,00,000.00 |
| | ----- |
| Total: | 1,04,05,000.00 |
| | ----- |

Fixed Capital - (i) + (ii) = 5,00,000.00 + 1,04,05,000.00 =
1,09,05,000.00

B. WORKING CAPITAL

i) Staff and Labour (Per Month)

| Designation (Rs.) | Nos. | Salary (Rs.) | |
|------------------------------------|------|--------------|-----------------------------|
| Production Engineer/Manager | 1 | 10,000.00 | 10,000.00 |
| Sales Executive | 1 | 5,000.00 | 5,000.00 |
| Accountant-cum- Store Keeper | 1 | 4,000.00 | |
| | | | 4,000.00 |
| | 26 | | |
| Watchman | 2 | 3,000.00 | 6,000.00 |
| Skilled Workers | 3 | 3,500.00 | 10,500.00 |
| Helpers | 3 | 3,000.00 | 9,000.00 |
| | | | ----- 44,500.00 |
| Add perquisite @ 10% of the Salary | | | |
| | | | 4,450.00 |
| | | Total: | ----- 48,950.00 ----- |
| | | Or Say Rs. | 49,000.00 |

ii) Raw Material (Per Month) Qty. (M.T.) Rate/MT (Rs.)
(Rs.)

| | | |
|---------------|----|--------------|
| HDPE Granules | 50 | 75,000 |
| | | 37,50,000.00 |

iii) Utilities (per month): (Rs.)

| | | |
|----------|--------------------------------------------------------|-------------|
| a) Power | | 1,50,000.00 |
| | (60% utilisation x 100 KW x 500 hrs. x Rs. 5 per unit) | |
| b) Water | | |
| | | 2,000.00 |

 Total: 1,52,000.00

iv) Other Contingent Expenses (Per month)
 (Rs.)

- | | |
|------------------------------|----------|
| q) Repairs and Maintenance | |
| 1,000.00 | |
| r) Transportation Charges | 5,000.00 |
| s) Postage and stationery | 1,000.00 |
| t) Telephone/Fax/Computer | |
| 2,000.00 | |
| u) Consumable Stores | |
| 1,000.00 | |
| v) Advertisement & Publicity | |
| 2,000.00 | |
| w) Insurance | 4,000.00 |
| x) Miscellaneous Expenses | |
| 2,000.00 | |

 Total: 18,000.00

12. TOTAL WORKING CAPITAL (Per Month)
 (Rs.)

- | | |
|---------------------|-----------|
| i) Staff and Labour | 49,000.00 |
| ii) Raw Material | |
| 37,50,000.00 | |

27

- | | |
|----------------|-------------|
| iii) Utilities | 1,52,000.00 |
|----------------|-------------|

| | |
|------------------------------|---------------------|
| iv) Other Contingent Exp. | 18,000.00 |
| ----- | ----- |
| | Total: 39,69,000.00 |
| | ----- |
| Working Capital for 3 months | 1,19,07,000.00 |

13. TOTAL CAPITAL INVESTMENT

(Rs.)

A. Fixed Capital
1,09,05,000.00

B. Working Capital for 3 months
1,19,07,000.00

Total: 2,28,12,000.00

14. FIANCIAL ANALYSIS

A. Cost of Production (per year) (300 days)

(a) Total Recurring Cost

4,76,28,000.00

(b) Depreciation on building @ 5%

17,500.00

(c) Depreciation on machinery & equipment @ 10%

10,00,500.00

(d) Depreciation on Dies, Moulds &

80,000.00

office equipment @ 20%

(f) Interest on total Capital Investment @ 12%

27,37,440.00

Total: 5,14,63,440.00

Or Say Rs.

5,14,63,000.00

B. Sales/Turn over (per year)

Item

Qty.(MT)

Rate (MT)

Value (Rs.)

| | | | |
|----------------------------------|-----|--------|----------------|
| HDPE Laminated Collapsible Tubes | 600 | 95,000 | 5,70,00,000.00 |
|----------------------------------|-----|--------|----------------|

C. Net Profit (Per year)

| | | | | |
|--------------|---|--------------------------|---|--------|
| Sales(Rs.) | - | Cost of Production (Rs.) | = | Profit |
| 5,70,00,000 | - | 5,14,63,000 | = | |
| 55,37,000.00 | | | | |

D. Net Profit Ratio = $\frac{\text{Net Profit} \times 100}{\text{Sales}}$

= $\frac{55,37,000 \times 100}{5,70,00,000}$ = 9.71 %

E. Rate of Return = $\frac{\text{Net Profit} \times 100}{\text{Total Capital Investment}}$

= $\frac{55,37,000 \times 100}{2,28,12,000}$ = 24.27 %

F. Break-even Point

| | |
|-----------------------|-----|
| Fixed Cost (Per Year) | Rs. |
|-----------------------|-----|

a) Depreciation on Building @ 5%

17,500.00

b) Depreciation on Machinery & Equipment @ 10%

10,00,500.00

c) Depreciation on Moulds/Dies & Office Equipment @ 20%

80,000.00

d) Insurance

48,000.00

e) Interest on total capital investment

27,37,440.00

f) 40% of salary and wages

2,35,200.00

g) 40% of other contingent expenses

67,200.00

Total: 41,85,840.00

Or Say Rs. 41,86,000.00

Net Profit (Per Year)

$$\begin{aligned} \text{B.E.P. \%} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Net Profit}} \\ &= \frac{41,86,000 \times 100}{41,86,000 + 55,37,000} \\ &= \frac{41,86,000 \times 100}{97,23,000} \\ &= 43.05\% \end{aligned}$$