

HDPE BLOW MOULDED AUTOMOBILE PETROL TANK

1. INTRODUCTION

Automobile Petrol Tanks are manufactured by Blow Moulding process using HDPE. In the era of globalisation, the demand for vehicles have increased tremendously and therefore, the requirement of petrol tanks has increased immensely. India is at a stage where most global players are setting up shop in the country which indicates the increasing level of industrialisation in our country.

2. MARKET POTENTIAL

Automobile production, at times, indicates the level of industrialisation of a country. India is at a stage where most global players are setting up shop in the country. Currently plastic consumption per car in India is around 60 kg. against global average of 140 kgs. per car. The production of automobiles in India is around 10 Million and is expected to reach 14 million by 2009-10. With high growth in Indian Automobile Industry and also India is becoming global hub for auto components.

As per Working Group Report on Petrochemicals, Ministry of Chemicals and Fertilizers, the demand of HDPE Blow moulded articles in India is projected to be 523 KT by 2010-11.

The consumption of HDPE in HDPE Blow Moulded Articles in India in 2004-05 was 155 KT.

3. BASIS & PRESUMPTIONS

- (i) The output capacity is taken as 50 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

Automobile components are manufactured by blow moulding process.

Extrusion Blow Moulding

In a typical extrusion blow moulding process, plastic granules are fed into the hopper of the extruder. These granules travel to the extruder

barrel whereby they are heated with the help of electric heaters and homogenized by the screw in the barrel. The plasticized mass is extruded into a tube called PARISON. The parison is then inflated into a mould of required form to contact and set up against the cooled walls of the mould cavity. The finished product is then extracted from the mould.

The following properties of end product must be ensured during manufacturing:

- Uniform wall thickness of the container
- Consistency in weight of moulded products
- Uniform colour dispersion throughout the article
- Specified dimensional accuracy

6. QUALITY & STANDARD

HDPE Blow Moulded Petrol tanks are manufactured as per the Specification of different Automobile Companies.

7. PRODUCTION CAPACITY (Per Annum)

- (a) Quantity (M.T.) : 300
- (b) Value (Rs.) : 3,60,00,000.00

8. TOTAL POWER REQUIREMENT

Total connected load (KW) : 202

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>	<u>Area Sq.Mtrs.</u>	<u>Rate per Sq.mtr.</u>	<u>Value (Rs.)</u>
	Land	500	500.00	2,50,000.00
	Building	300	3500.00	10,50,000.00
			Total:	13,00,000.00

ii) MACHINERY & EQUIPMENT

<u>Sr.No.</u>	<u>Description of machines</u>	<u>Qty. (Nos.)</u>	<u>Value (Rs.)</u>
(a)	Production Unit		
i)	Extrusion Blow Moulding Machine (capacity 50 kgs./hour)		94,00,000.00
ii)	Scrap Grinder		1,00,000.00
iii)	Compressor		5,00,000.00
iv)	Cooling Tower		1,00,000.00
(b)	Testing Equipment & Other Accessories		2,00,000.00
(c)	Electrification & Installation @ 10% of cost & machinery (a) & (b)		10,30,000.00
(d)	Pre-operative expenses		50,000.00
	Total cost of machinery & equipment (a to d)		1,13,80,000.00
(e)	Cost of Moulds & Dies		6,00,000.00
(f)	Cost of Office Equipment/Furniture/Computers etc.		3,00,000.00
	Total:		1,22,80,000.00

Fixed Capital = (i + ii) = 13,00,000 + 1,22,80,000

= 1,35,80,000.00

B. WORKING CAPITAL

(i) Staff and Labour (Per Month)

Designation	Nos.	Salary (Rs.)	Total Rs.)
Production Engineer/ Manager	01	10,000.00	10,000. 00
Sales Executive	01	5,000.00	5,000.00
Accountant-cum- Store Keeper	01	4,000.00	4,000.00
Watchman	02	3,000.00	6,000.00
Skilled Workers	03	3,500.00	10,500.00
Helpers	03	3,000.00	9,000.00

			44,500.00
Add perquisite @ 10% of the salary			4,450.00

		Total:	48,950.00
		Or Say:	49,000.00

ii) <u>Raw Material (P.M.)</u>	<u>Qty.(Kg/Tons)</u>	<u>Rate Rs./MT</u>	(Rs.)
HDPE Granules	25 MT	75,000	18,75,000.00

(iii) <u>Utilities (per month):</u>	(Rs.)
i) Power (60% utilisation x 202 KW x 500 hrs.xRs.5 per unit)	3,03,000.00
ii) Water	2,000.00

Total:	3,05,000.00

iv) <u>Other Contingent Expenses (per month)</u>	(Rs.)
a) Repairs and Maintenance	1,000.00
b) Transportation charges	5,000.00
c) Postage and stationery	1,000.00
d) Telephone/Fax/Computer	2,000.00

e)	Consumable Stores	1,000.00
f)	Advertisement & Publicity	2,000.00
g)	Insurance	3,000.00
h)	Miscellaneous Expenses	1,000.00

	Total:	30,000.00

12. TOTAL WORKING CAPITAL (PER MONTH)

(Rs.)

i)	Staff and Labour	49,000.00
ii)	Raw Material	18,75,000.00
iii)	Utilities	3,05,000.00
iv)	Other Contingent Exp.	30,000.00

	Total:	22,59,000.00

	Working Capital for 3 months	67,77,000.00

13. TOTAL CAPITAL INVESTMENT

(Rs.)

A.	Fixed Capital	1,35,80,000.00
B.	Working Capital for 3 months	67,77,000.00

	Total:	2,03,57,000.00

14. FINANCIAL ANALYSIS

A.	Cost of Production (per year) (300 days)	
(a)	Total Recurring Cost	2,71,000.00
(b)	Depreciation on building @ 5%	52,500.00
(c)	Depreciation on machinery & equipment @ 10%	11,38,000.00
(d)	Depreciation on Diesm& Moulds & Office Equipment @ 20%	1,80,000.00
(e)	Interest on total Capital Investment @ 12%	24,42,840.00

	Total:	3,09,21,340.00
	Or Say:	3,09,21,000.00

B. Sales/Turn over (per year)

<u>Item</u>	<u>Qty.(MT)</u>	<u>Rate (MT)</u>	<u>Value (Rs.)</u>
HDPE Blow Moulded Automobile Petrol Tank	300 M.T.	1,20,000.00	3,60,000.00

C. Net Profit (per year)

Sales	-	Cost of Production	=	Profit
Rs. 3,60,00,000		Rs. 3,09,21,000	=	Rs. 50,79,000

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

= $\frac{50,79,000 \times 100}{3,60,00,000} = 14.1\%$

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

= $\frac{50,79,000 \times 100}{2,03,18,000} = 25.0\%$

F. Break-even Point

Fixed Cost (Per Year)	(Rs.)
a) Depreciation on Building @ 5%	52,500.00
b) Depreciation on Machinery & Equipment @ 10%	11,38,000.00
c) Depreciation on Mould/Dies& Office Equipment @ 20%	1,80,000.00
d) Insurance	1,20,000.00
e) Interest on total Capital Investment	24,42,840.00
f) 40% of Salary and wages	2,35,200.00
g) 40% of other contingent expenses	96,000.00

Total:	42,64,540.00
Or Say:	42,65,000.00

Net Profit (Per Year)

$$\begin{aligned} \text{B.E.P\%} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Net Profit}} \\ &= \frac{42,65,000 \times 100}{42,65,000 + 50,90,000} \\ &= \frac{42,65,000 \times 100}{93,55,000} \\ &= 45.60\% \end{aligned}$$