

Tyre Retreading (By Cold Process)

PRODUCT CODE	: 300401000
QUALITY AND STANDARDS	: Manufacturers' own specifications
PRODUCTION CAPACITY	: 1. LCV Tyre Retreading Size-700x15-2400 Nos. 2. Passenger Car Tyre Retreading Size-590x15-3600 Nos. 3. Truck Tyre Retreading Size 300x20-3000 Value : Rs. 91.8 Lakhs
MONTH AND YEAR OF PREPARATION	: December, 2002
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INTRODUCTION

Retreading of damaged tyre is done by conventional hot matrix curing in most cases. But recently a new technology has been developed called "Precured Tread Rubber Retreading Process" which is commonly known as "Cold Process Retreading". In this process, the Precured Tread Rubber already has a tread pattern on it eliminating the need for a tread matrix at vulcanizing stage. Tread Rubber is precured along with other raw materials and manufactured in the factory under controlled conditions and given a well researched pattern ensuring that the transporter gets a reliable perfectly finish product. Retreading Tyre by precured method gives 50% more mileage than the tyre retreaded by conventional process.

MARKET POTENTIAL

The market demand of tyre retreading by cold process is increasing day by day. There is a good scope for setting up units for tyre retreading by cold process using procured tread rubbers.

BASIS AND PRESUMPTIONS

This project profile has been prepared based on the following presumptions:

1. Production capacity is calculated on single shift of 8 hours a day for 300 working days in a year at 75% efficiency.
2. Capacity utilization is 60% during first year 80% in second year and full capacity utilization from 3rd year onwards.

3. The salaries and wages, cost of raw material, utilities, rent of the shed etc. are based on prevailing rates in and around local region hence cost factor is likely to vary with location of the units.
4. Interest on terms loan and working capital has been taken @ 16% on an average. The rate may vary depending upon policy of financial institutions and agencies from time to time.
5. The cost of machinery and equipments refers to particular make and model and prices are approximate to those ruling at the preparation of the same.
6. The project preparation cost, non-refundable deposits, may be considered under the head of pre-operative expenses.
7. The break even point is calculated on full capacity utilization.
8. Shed rental charges are Rs. 10,000 per month. The rate is likely to vary depending upon the location of the units.
9. Power at the rate of Rs. 3.50/KW is taken.
10. The operation period of this project is estimated to be about 10 years considering technology obsolescence.

IMPLEMENTATION SCHEDULE

Sl.No.	Activity	Period
1.	Site selection preparation of project report and other formalities, application for loan and finance/ disbursement and, DIC registration etc.	6 months
2.	Seeking quotation for machines, purchase, installation and power	3 months

Sl.No.	Activity	Period
	connection, obtaining clearances from Pollution Control Board and other Govt. bodies and agencies.	
3.	Procurement of raw material, recruitment of staff and labour and commercial production	3 months
4.	Total period required for commencing commercial production.	12 months

TECHNICAL ASPECTS

Process of Manufacture

The tyre coming from the customers is cleaned dully. Dust and mud are removed. The casing is inspected for cuts, ply section, condition of beads etc., and based on the condition of the casing, the tyre is selected or rejected. Under inflated conditions the selected tyre's crown area is buffed to the required texture and contour. This is for better bonding of procured rubber to the casing. The buffed casing is mounted on the tread building machine. Cushion compound is applied on the buffed tread area over which the procured tread rubber is applied and stickled using rollers. The joint portion of the procured tread rubber is stepped to avoid possible opening during curing of the tyre. The build up of the tyre is covered by a rubber envelope and placed in the "bonder" and the bonder steam is passed at specific temperature, which cures the cushion compound to complete the bonding of the tread on the casing.

Quality Control and Standards

No such standard is available but the treading will be done as per the specifications fixed by tyre manufacturers.

Production Capacity (per annum)

1. LCV Tyre retreading Size-700×15	2400 Nos.
2. Passenger Car Tyre Retreading Size-590×15	3600 Nos.
3. Truck Tyre Retreading Size-300×20	3000 Nos.

Motive Power **20 HP.**

Pollution Control

Tyre Retreading work generally should not be done in public place and NOC from Pollution Control Board may be obtained.

Energy Conservation

All efforts are to be put in for optimum utilization of power. The following measures can be adopted to conserve power and save energy:

1. Proper maintenance of power operated equipments and machinery and fuel operated boiler and their judicious use.
2. Shed to be properly ventilated and covered with transparent sheet to have enough light in day time with minimum requirements of lighting.

FINANCIAL ASPECTS**A. Fixed Capital****(i) Land and Building (In Rs.)**

Covered area for workshop, office, stores etc. and open Area - 2000 sq feet (per month).	10,000
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(ii) Machinery and Equipment

Sl. No.	Particular	Ind/ Qty. Imp Nos.	Price (Rs.)	Total (In Rs.)
1.	Buffing machine with dust collector builder tyre truck bonder/three tyre LCV/Passenger	Ind 1	6,00,000	6,00,000

Sl. No.	Particular	Ind/ Qty. Imp Nos.	Price (Rs.)	Total (In Rs.)
	bonder with curing rims and Electric hoist			
2.	Work bench Envelope/Tyre stand Gantry	Ind. 1	35,000	35,000
3.	Boiler cap. 300 kg/hrs.	do 1	2,25,000	2,25,000
4.	100 lbs working pressure Air compressor fitted with 5 H P Motor	do 1	40,000	40,000
5.	Air conditioner	do 1	50,000	50,000
	Total			9,50,000

Electrification and Installation at 10% of the above cost Rs. 95,000

Office Equipments and Furniture. LS Rs. 50,000

Cost of Auxiliary items. i.e. pipe erection Electric fittings, Retreading, Tools, Mechanical Hoist with Trolley etc. Rs. 1,50,000

Total 12,45,000

(iii) Pre-operative Expenses Rs. 50,000

Total 12,95,000

Total Fixed Capital Requirement Rs. 12,95,000

B. Working Capital (per month)**(1) Personnel**

Sl. No.	Description	Nos	Salary (Rs.)	Total (In Rs.)
1.	Manager	1	8,000	8,000
2.	Supervisor (Technical)	1	6,000	6,000
3.	Skilled Workers	5	3,500	17,500
4.	Semi-skilled Workers	6	3,000	18,000
5.	Un-skilled Workers/ Helper	3	2,000	6,000
6.	Clerk cum Typist	1	2,500	2,500
7.	Salesman	1	2,500	2,500
8.	Office Assistant-cum-peon	1	2,000	2,000
9.	Watchman	1	2,000	2,000
	Total			64,500

(ii) Raw Material (per month)

Sl. Description No.	Qty.	Ind/ Imp	Price (Rs.)	Total (In Rs.)
<i>a) For Retreading 200 LCV Tyre in Precured System</i>				
i) Precured Tread Rubber	1,000kg	Ind	85/Kg	85,000
ii) Cushion Compound	100 Kg	do	84/Kg	8,400
iii) Vulcanising Solution	60 Ltr.	do	60/Ltr.	3,600
iv) Envelope	200 Nos.	do	5/Nos	1,000
v) Curing Bag	200 Nos	do	5.5/Nos	1,100
Total				99,100
<i>b) For Retreading 300 Passenger Car Tyre in Precured System</i>				
i) Precured Tread Rubber	900 kg	Ind	85 Kg	76,500
ii) Cushion Compound	105 Kg	do	84 Kg	8,820
iii) Vulcanising Solution	75 Kg	do	60/Ltr.	4,500
iv) Envelope	300 Nos	do	5/Nos.	1,500
v) Curing Bag	300 Nos	do	5.5/Nos.	1,650
Total				92,970
<i>c) For Retreading 250 Nos. Truck Tyre in Precured System</i>				
i) Precured Tread Rubber	2375 kg	Ind	85 Kg	2,01,875
ii) Cushion Compound	252 Kg	do	84 Kg	21,168
iii) Vulcanising Solution	250 Ltr.	do	60/Ltr.	15,000
iv) Envelope	250 Nos.	do	5/Nos.	1,250
v) Curing Bags	250 Nos.	do	5.5/Nos.	1,375
Total				2,40,668
Total Raw Material				4,32,738
Say				4,32,800

(iii) Utilities (per month)

	(In Rs.)	
Power @ Rs. 3.50 for 3600 units	12,600	
Fuel for Boiler	20,000	
Total		32,600

(iv) Other Contingent Expenses

	(In Rs.)	
1. Rent	10,000	
2. Postage and Stationery	2,500	
3. Insurance and Taxes	2,000	
4. Telephone	1,500	
5. Repair and Maintenance	2,000	
6. Publicity and Advertisement	2,500	
7. Travelling and Transport	6,000	
8. Renewal and Replacement	1,500	
9. Other Miscellaneous Expenses	5,000	
Total		33,000

(v) Total Recurring Expenses

	(In Rs.)	
1. Staff and Labour	64,500	
2. Raw Material	4,32,800	
3. Utilities	32,600	
4. Other Contingent Expenses	33,000	
Total		5,62,900
Say		5,63,000

(vi) Total Working Capital for 3 Months

Rs. 5,63,000 x 3 = Rs. 16,89,000

C. Total Capital Investment

1. Fixed Capital	Rs. 12,95,000	
2. Working Capital (for 3 month)	Rs. 16,89,000	
Total		Rs. 29,84,000

FINANCIAL ANALYSIS

(1) Cost Of Production (per annum) (In Rs.)

1. Recurring Expenses	67,56,000	
2. Depreciation on Machinery @ 10%	95,000	
3. Depreciation on tool and Fixtures @ 20%	30,000	
4. Depreciation on Furniture and Office Equipments @ 20%	10,000	
5. Interest on Total Capital Investment @ 16%	4,77,450	
Total		73,68,450

(2) Turnover (per annum)

- a) Precured Retreaded Charge for LCV Tyre size -700×15, 2400 Nos. × Rs. 900 = Rs. 21,60,000
- b) Passenger Car Tyre Size - 590×15, 3600 Nos. × Rs. 700 = Rs. 25,20,000

c) For Truck Tyre Size - 300 × 20,
 3000 Nos. × Rs. 1500 = Rs. 45,00,000
 Total Rs. 91,80,000

(3) Profit (per annum)
 Sales – Cost of Production
 = Rs. 91,80,000 – 73,68,450 = Rs. 18,11,550

(4) Net Profit Ratio
 = $\frac{\text{Profit (per annum)} \times 100}{\text{Sale (per annum)}}$
 = $\frac{18,11,550 \times 100}{91,80,000}$
 = 19.7%

(5) Rate of Return = $\frac{\text{Profit (per annum)} \times 100}{\text{Total Capital Investment}}$
 = $\frac{18,11,550 \times 100}{29,84,000}$
 = 61% Appx.

(6) Break-even Point

Fixed Cost	(In Rs.)
1. Rent	1,20,000
2. Depreciation on Machinery @ 10%	95,000
3. Depreciation on Tools and Fixtures @ 20%	30,000
4. Depreciation on Furniture and Office Equipments @ 20%	10,000
5. Interest @ 16%	4,77,450
6. 40% of Salary and Wages	3,09,600
7. 40% of Utilities and Other Contingent Expenses	2,66,880
Total	13,08,930

B.E.P. = $\frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}}$
 = $\frac{13,08,930 \times 100}{13,08,930 + 18,11,550}$
 = 42%

Addresses of Machinery Suppliers

1. M/s. Security Equipment Engineers
48, Chetla, Road,
Kolkata- 700027
2. M/s. Industrial Rubber Products
20, Khanpara Road,
Kolkata - 700065
3. M/s. Nandi and Co.
125, Belilious Road,
Howrah - 711101 (WB)
4. M/s. Chand and Co. Engineering Pvt. Ltd.
3/18, Mahendra Road,
Kolkata-700025
5. M/s. Die Hard Polimer Products
117, Ghorkha Basi Road,
Kolkata - 700028

Addresses of Raw Material Suppliers

1. Local Market
2. M/s. H. K. Agarwal and Co. Sevoke Road,
Siliguri-734401
3. M/s. Beekay Hardware
Tadong, Gangtok,
Sikkim-737102
4. M/s. Cherry. Pvt. Ltd.
31-A National Highway, Gangtok,
Sikkim-737101
5. M/s. Vinod Enterprises
Near Convey Ground, Tadong,
Gangtok,
Sikkim-737101.