

PROJECT PROFILE
ON
AUTOMOBILE RUBBER CHANNELS &
BEADINGS

MONTH & YEAR
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AUTOMOBILE RUBBER CHANNELS & BEADINGS

INTRODUCTION

The channels and beadings used in the automobiles are door seals, engine mounting strips, wind screen and rear window strips, Q-channels, truck lid seals etc. The rubber is extruded to manufacture the aforementioned items. The machinery and equipments required for the production of these items are easily available from indigenous sources. The technology of their production is also very simple.

MARKET

Since automobile channels and beadings form an integral part of the automobiles, their consumption is directly related to the vehicle population of the country and the yearly production of various automobiles. With a tremendous growth in the number of joint ventures with foreign collaborations for manufacturing a variety of new cars, trucks and jeeps in the country and also many indigenous manufacturers increasing their production, while also introducing newer models of vehicles, the automobile sector is expected to grow in leaps and bounds in the years to come. Further there is a good replacement market also, for these rubber items as they are periodically replaced due to wear and tear. There is also a good export potential for these products.

The Indian rubber industry has been growing in strength and importance, as a part of India's burgeoning role in the global economy. India is the world's largest producer and the third largest consumer of natural rubber and India is also one of the fastest growing economy globally. With a stable annual growth rate of 8-9%, rising foreign exchange reserves, rapid expansion in the capital markets and FDI inflow, India proudly stakes its claim as the second fastest

growing major economy in the world. These factors along with high concentration of automobile production and the presence of large and medium industries in South India, Chennai is the perfect place for the event India Rubber Expo-2011.

The Indian Rubber Expo 2011 is a testament to the confidence and relevance of India's largest rubber body the All India Rubber Industries Association AIRIA, the organiser of the India Rubber Expos. AIRIA, established in 1945 is comprised of over 1200 members and is headquartered in Mumbai.

It is considered to be one of the key players in global rubber business. Rapid progress in made in the production of natural rubber. India is home to some of the world's largest rubber enterprises through direct investment and technical collaboration.

There is no doubt that with rubber consumption stagnating in various Western countries and the shift in consumption of rubber to the Asia Pacific region, the focal country for this decade is India. There exists a huge scope for expansion causing import of machinery, technology, raw materials and export Rubber goods. There are 5000 units comprising 30 large scale, 300 medium scale and around 4600 small scale and tiny sectors in India.

These units are manufacturing more than 35000 rubber products, employing close to four hundred thousand people, which includes technically qualified support personnel's contributing Rs 40 Billion to the National Exchequer.

Natural rubber production in the country rose 3.7 per cent during 2010-11 against the previous year.

Domestic production stood at 8,31,400 tonnes in 2009-10 and 8,61,950 tonnes in 2010-11,as per the Rubber Board. The Rubber Board Chair anticipates the production for 2011-12 was 9,02,000 tonnes. Domestic consumption also increased by 2 per cent in 2010-11.

During 2010-11, growth in tyre production in the automotive sector grew by 23 per cent. Export of tyres also increased by 20 per cent. However, truck and bus tyre exports declined by five per cent.

The projected rubber consumption in 2011-12 is 9,77,000 tonnes.

During 2010-11 fiscal, exports stood at 28,424 tonnes compared with 25,090 tonnes in the previous fiscal. Imports accounted for 1,77,482 tonnes, 73 per cent of which was through duty free channels.

The chairperson said there would not be any shortage as the opening stock of rubber in 2011-12 was relatively high at 2,77,095 tonnes against 2,11,290 tonnes in 2010-11.

According to the International Rubber Study Group report, global rubber production-consumption balance in 2010 and 2011 showed deficits of 380,000 tonnes and 234,000 tonnes, respectively.

Automobile Industry and Rubber

India produces millions of passenger cars every year such as BMW, Nissan, Mitsubishi, Volvo, Toyota, Ford, Caparo, Swaraj Mazda, Fiat, Ford GM, Honda, Volvo Yamaha, Hyundai, Daimler, and Ranault in addition to the Indian manufacturers such as Ashok Leyland, TVS, Hindustan Motors, Bajaj Auto, Hero Honda, Tata Motors Royal Enfield and Tafe Tractors have all set their manufacturing base in India. Together they have during the last decade set a great pace of growth to the rubber industry as well.

Tyre Companies running operations in India are MRF Ltd, TVS Sri Chakra Tyres, Apollo Tyresm, Emerald Tyres, Michelin, Goodyear, JK Tyres Kumho Tyres ETC. India exports to over 85 countries including USA, Germany, France U.K, Italy, UAE, Saudi Arabia , Africa and Bangladesh.

The automobile production in the country is showing remarkable progress and any ancillary products such as rubber products which are used in automobiles. The growth in automobile production in the past can be seen from the following figures

AUTOMOBILE PRODUCTION TRENDS

No of vehicles

Category	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Passenger Vehicles	1,209,876	1,309,300	1,545,223	1,777,583	1,838,593	2,357,411	2,987,296
Commercial Vehicles	353,703	391,083	519,982	549,006	416,870	567,556	752,735
Three Wheelers	374,445	434,423	556,126	500,660	497,020	619,194	799,553
Two Wheelers	6,529,829	7,608,697	8,466,666	8,026,681	8,419,792	10,512,903	13,376,451
Grand Total	8,467,853	9,743,503	11,087,997	10,853,930	11,172,275	14,057,064	17,916,035

Source: Society of Indian Automobile Manufacturers (SIAM)

INSTALLED CAPACITY

Product	Installed capacity per hour	No of working hours per day	Capacity per day	Capacity per annum 300 days per annum
Automobile rubber channels & beadings	13.75 kgs	16	220 kgs	66 MT

PLANT AND MACHINERY

Sl. No	Description	Qty	Value
1.	(i) Production machinery, Tools & Equipments consisting of the following: Mixing mill of size 14" × 36" with reduction gear, 40HP motor & accessories	Whole Plant 1 No	5000000
2.	Extruder 3"(75mm), with 10 HP motor & accessories.	1 No	

3.	Horizontal-Direct Steam Heating type Steam Vulcaniser of size 4" dia. and 10" long.	1 No	
4.	Baby Boiler 150 Kgs/hr. steam Capacity	1 No	
5.	Hand fly press, electrically heated complete with strip heaters, panel control for rubber moulding, size 12" × 12".	2 Nos	
6.	Extruder Die and Various Moulds		
7.	Miscellaneous equipments like rectangular and circular GI trays, tools and tackles.		
8.	Weighing scales: Platform type(100 Kg) Single Pan type (10Kg.) Digital type	1 No 1 No	
	(ii)Material handling equipments		125000
	(iii) Testing & Inception equipments, tools & apparatus		375000
	TOTAL		550000

MANUFACTURING PROCESS

1. Process Outline

Rubber is mixed with all the necessary ingredients in a two roll mixing mill. The mixed stock is then slabbed off and kept for maturation for about 24 hours. The matured stock is then pre-warmed in the mixing mill and long ribbon shaped pieces are cut from the mill roll, which are then fed into an extruder fitted with the requisite die to form the component. The extrudate is collected in metal trays and is transferred to the autoclave or steam vulcaniser for curing. For endless channels like wind-screen channels of trucks and cars, the long channel is taper-cut at necessary length and joined together by applying adhesive at the ends. The joints are then cured using a hand fly press equipped with moulds having grooves corresponding to the shape of the channels.

RAW MATERIALS

For-Kgs	66000		
	Qty- kgs	Rate/kg	Value Rs lakhs
Natural Rubber	25000	234.00	58.50
Zinc oxide	1800	120.00	2.16
Stearic acid	600	75.00	0.45
Vulcanox-4020	300	150.00	0.45
Clay	24000	7.00	1.68
Whiting	6000	6.00	0.36
FEF Black	6000	55.00	3.30
Process oil	1800	40.00	0.72
Parfin wax	300	72.00	0.22
CBS	300	250.00	0.75
Sulphur	780	15.00	0.12
Miscellaneous Chemicals like talc etc			3.60
Total			72.30
Packing materials	66000	1.00	0.66

UTILITIES

Power & Fuel

Three phase-	KW	45.00
Power charges	Rs.lakhs p.a	5.94
Fuel-Rs	25000 p.m	3.00
Power & fuel		8.94
For process-	Litres per day	2000
For human consumption-	litres/day	200

LOCATION LAND AND BUILDING

Built up area-	1000
Sq.ft	
Rent p.m.-Rs per 10 per	10000
sq.ft	
Advance-10 months.Rs	100000

MANPOWER

		Monthly	Total
		wages	
Supervisor	1	9000	9000
Skilled	3	7000	21000
Unskilled	12	5000	60000
Accounts Assistant	1	6000	6000
Sales Executive	1	7000	7000
Security	2	5000	10000
sub total			113000
Add benefits		20%	22600
Total per month			135600
TOTAL PER ANNUM-Rs. lakhs			16.27

SCHEDULE OF IMPLEMENTATION

After the funding arrangements are made and the premises are kept ready the project implementation will take about 3 months period.

COST OF PRODUCTION AND PROFITABILITY

Assumptions

Installed capacity	66.00 MT of various types of Automobile Channels & Beadings per annum
Capacity utilisation	Year-1 -60% Year -2 -70% Year-3 onwards- 80%
Selling price per MT	Rs.2.20 lakhs
Raw materials	As per the details given above
Packing materials	As per details given above
Power & Fuel	Rs.8.94 lakhs per annum at 100%
Wages and salaries	Rs. 16.27 lakhs with increase 5% every year.
Repairs and Maintenance	Rs.1.20 lakh per annum
Depreciation	Written down value method -15 % on machinery
Selling general and administrative expenses	Rs.30000 per month
Interest on Term loan	14% per annum
Interest on working capital	14 % per annum
Income tax	34 % on profits

MACHINERY SUPPLIERS

1. M/s.Indian Expeller Works Private Ltd, A-4, Naroda Industrial Estate

Ahmedabad – 383 330

2. M/s. Matharu Engineering Works, Plot No.1, Unit No.4, Opp. Tatwagyan Vidyapeeth

Ghodbunder Road, Chitalsar, Thane - 400607

3. M/s. Modern Rubber Machinery Manufacturers Pvt. Ltd, 310, Jogani Industrial Estate

541, Senapati Bapat Marg, Dadar, Mumbai – 400 028

4. M/s. Emson Industries, 6-A, Shri Ram Industrial Estate, Kaley Marg, Bail Bazar, Kurla

Mumbai – 400 011

5. M/s. Modern Hydraulics, 5, Italian Building(Ground Floor), 381, Sane Gruji Marg

Agripada, Near I.T.I, Mumbai – 400 011

6. M/s. Perumacheril Castings Industries, Market Landing, Kottayam – 686 001, Kerala

7. M/s. Hind Hydraulics & Engineers, E-43/1, Okhla industrial Area, Phase –II
New Delhi – 110 002

8. M/s. Micromertics Engineers (P) Ltd., 298, 4th Floor, Khaleel Shiraji Estate
Fountain Plaza, Pantheon Road, Egmore, Chennai – 600 028

9. M/s. Anant Engineering Works, Bassi Road, Sirihindi (N.Rly), Punjab – 140 406

10. M/s. Santhosh Industries, A-1, Sone Udyog, Parsi Panchayat Marg, Andheri (East)

Mumbai – 400 069

(b) Steam Boilers

1. M/s. Thermax Ltd, 610, Anna Salai, Chennai – 600 006

2. M/s. Maxima Boilers Pvt Ltd, 574/80, Mount Road, Congress Building, Teynampet, Chennai – 600 006.
3. M/s. Firetech Boilers Pvt. Ltd, No.211, 2nd Cross, 38th Main, BTM Layout, 2nd Stage,
Bangalore – 560 068
4. M/s. Maxtherm, K3, Ambattur Industrial Estate, Ambattur, Chennai – 600 058
5. M/s. Southern Boilers & Equipments Pvt. Ltd, Y- 169, 1st Street, Anna Nagar , Chennai – 600 040

Weighing Machines & Balances

1. M/s. Giri Brothers Private Ltd, P.B.No 1646, No.51, Rajaji Salai, Chennai – 600 001
2. M/s. Tamilnadu Scale Industries,166, Broadway, Chennai – 600 108

(d) Testing & Measuring Instruments

1. M/s. P.B.Shah & Co,182, Linghi Chetty Street, Chennai – 600 001
2. M/s. Blue Star Ltd, 620, Anna Salai, Chennai – 600 006
3. Madras Metallurgical Services, 5, Lalithapuram Street, Royapettah, Chennai - 600014
4. M/s. Presto Stantest Pvt. Ltd, C-117, F.F. Complex, Okhla Industrial Area, New Delhi – 110 020
5. M/s. Prolific Engineers, D-91, Sector – 2, Noida – 201 301,
6. M/s. ABS instruments Pvt. Ltd, 22, Electronics Complex, Guindy, Chennai – 600 032

(e) All miscellaneous equipments, tools, dies, moulds, fabricated items etc can be procured from local sources.

Suppliers of Raw Materials

Rubber

1. M/s. Viraj Rubbers Private Ltd, 2-A, GNT Road, Ponniannanmedu, Madhavaram Post
Chennai – 600 110
2. M/s. Silpro Trading Co, 8, Venkataratnam Road, Teynampet, Chennai – 600 018
3. M/s. Arasu Rubber Corporation Ltd, 259, Anna Salai, Chennai – 600 006
4. M/s. R.K. polymer, 196/5, Govindappa naicken Street, Chennai – 600 001
5. M/s. AVT Rubber products Ltd, 22, Marshells Road, Egmore, Chennai – 600 008
6. M/s. Goodluck Rubber House, Apnagar, 103 Marshells Road, Egmore
Chennai – 600 008
7. M/s. Kurian Abraham Ltd, 13/1, 423 MS Road, Parvathipuram, Nagercoil – 629 001
8. M/s. Cochin Malabar Estates and Inds Ltd, 6/117, Race Course Road,
Coimbatore – 641 018

(b) Rubber Chemicals

1. M/s. Bayer India Ltd, 749, Anna Salai, Chennai – 600 002
2. M/s. National Organic Chemical industries Ltd, 8, Haddows Road, Chennai – 600 006
3. M/s. A.V. Thomas & Co (India) Ltd, 22, Marshalls Road, Egmore, Chennai – 600 008
4. M/s. Dujodwala Industries, 43, Armenian Street, Chennai – 600 001
5. M/s. Bharat Carbon Industries, 43, Buxipur Industrial Area, Gorakhpur – 273 001, U.P
6. M/s. Rubo-Chem Industries (P) Ltd, 403/404, laxmi Commercial Complex
Senapati Bapat Marg, Mumbai – 400 028
7. M/s. I.C.I India Ltd, Rubber Chemicals Division, 149, Montieth Road,

Chennai – 600 008

8. M/s. Monsanto Chemicals of India Ltd, F-4, Third Phase, Thiru Vi ka Industrial Estate

Chennai – 600 097

9. M/s. Philips Carbon Black Ltd, 22, Marshalls Road, Egmore, Chennai – 600 008

10. M/s. R.K.Polymer,196/5, Govindappa Naicken Street, Chennai – 600 001

11. M/s. South India Rubber & Chemicals, C-4, Ram Square, No.2 Village Road Nungabakkam, Chennai – 600 001

12. M/s. Manickavelu Corporation, Plot No. W-300, 19th Street, Sector – C, Anna Nagar Western Extn, Chennai – 600 101.

FINANCIAL ASPECTS

1. COST OF PROJECT

	[Rs.lakhs]
Land & Building (Advance)	1.00
Plant & Machinery	55.00
Other Misc. assets	2.00
Pre-Operative expenses	4.00
Margin for WC	1.92
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	63.92
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2. MEANS OF FINANCE

Capital	22.67
Term Loan	41.25
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	63.92
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3. COST OF PRODUCTION & PROFITABILITY STATEMENT

	[Rs.lakhs]				
Years	1	2	3	4	5
Installed Capacity-MTs	66	66	66	66	66
Utilisation	60%	70%	80%	80%	80%
Production/Sales-MTs	40	46	53	53	53
Selling Price per MT -Rs.	2.20 lakhs				
Sales Value (Rs.lakhs)	88.00	101.20	116.60	116.60	116.60
Raw Materials	43.38	50.61	57.84	57.84	57.84
Packing	0.40	0.46	0.53	0.53	0.53

Materials					
Power& fuel	5.36	6.26	7.15	7.15	7.15
Wages & Salaries	16.27	17.09	17.94	18.84	19.78
Repairs & Maintenance	1.20	1.32	1.45	1.60	1.76
Depreciation	8.25	7.01	5.96	5.07	4.31
Cost of Production	74.86	82.75	90.87	91.03	91.37
Selling, Admin, & General exp	3.60	3.78	3.97	4.17	4.38
Interest on Term Loan	5.78	5.05	3.61	2.17	0.72
Interest on Working Capital	0.92	0.92	0.92	0.92	0.92
Total	85.16	92.50	99.37	98.29	97.39
Profit Before Tax	2.84	8.70	17.23	18.31	19.21
Provision for tax	0.96	2.96	5.86	6.23	6.53
Profit After Tax	1.88	5.74	11.37	12.08	12.68
Add:	8.25	7.01	5.96	5.07	4.31
Depreciation					
Cash Accruals	10.13	12.75	17.33	17.15	16.99
Repayment of Term loan	0.00	10.31	10.31	10.31	10.32

4. WORKING CAPITAL:

	Months	Values	%	Margin	Bank
	Consumptions			Amount	Finance
Raw Materials	0.50	1.81	25%	0.45	1.36
Consumables	2.00	0.07	25%	0.02	0.05
Finished goods	0.50	3.12	25%	0.78	2.34

Debtors	0.50	3.67	10%	0.37	3.30
Expenses	1.00	0.30	100%	0.30	0.00
		<u>8.97</u>		<u>1.92</u>	<u>7.05</u>

5. PROFITABILITY RATIOS BASED ON 80% UTILISATION

<u>Profit after Tax</u>	=	<u>11.37</u>	10%
Sales		116.60	

<u>Profit before Interest and Tax</u>	=	<u>21.76</u>	31%
Total Investment		70.97	

<u>Profit after Tax</u>	=	<u>11.37</u>	50%
Promoters Capital		22.67	

6. BREAK EVEN LEVEL

Fixed Cost (FC):

	[Rs.lakhs]
Wages &	17.94
Salaries	
Repairs & Maintenance	1.45
Depreciation	5.96

Admin. & General expenses	3.97
Interest on TL	3.61
	<hr/>
	32.93
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Profit Before Tax (P) 17.23

$$\text{BEL} = \frac{\text{FC} \times 100}{\text{FC} + \text{P}} = \frac{32.93}{50.16} \times \frac{80}{100} \times 100$$

53% of installed capacity