

Tennis Ball

| | |
|---------------------|---|
| Product Code | NIC 2004: 36934 ASICC: 93114 |
| Quality & Standard | IS: 2216-19885 Or International Standards |
| Production Capacity | Tennis Ball 6,00,000 Balls PA |
| Value | Rs. 90,00,000/- PA |
| Uploaded on | June 2020 |

(I) Introduction

Tennis is a four-point game played on a court and which is divided in the middle by a net. For playing this game, a ball is hit by players (two or four) on both sides in such a way that it goes to others side without touching the net and falls in the specified marked area of the court. This ball is known as Tennis Ball. These balls are made of vulcanised rubber and covered with Melton cloth, which has high wool content or Needle cloth, which is cheaper to produce and can have a greater content of synthetic fibres. It is available in white or optic yellow.

(II) Market Potential

Tennis is an internationally popular game. It is played in many countries of world. It is becoming in very popular in India also as amount of Award is huge in most of the events. India is also holding international events for this game, which has popularised this game and many international stars have come up from India also. This has increased the demand of tennis balls in domestic market. In international also, Indian balls have very good demand.

(III) Scope

This industry is a non-polluting and labour intensive industry. Therefore, it has tremendous scope and this type of units can be started anywhere in rural or urban area.

(IV) Basis & Presumption

1. The capacity is based upon monthly production 50,000 Tennis Balls on Single Shift of 8-hrs. a day and 25-working days in a month.
2. It is presumed that 1st year, the capacity utilization will be 70% followed by 85% in the next year and 100% in the subsequent year.
3. The rates quoted in respect of salaries and wages for skilled worker and others are on the basis of minimum rate in the state of U.P.
4. Interest rate for the fixed and working capital has been taken @ 14% on an average whether financed by the Bankers or Financial Institutional.
5. The margin money required is minimum (25% of the total capital investment).
6. Pay –Back period may be five year after the initial gestation period.
7. The gestation period in implementation of the project may be to the tune of 6 to 9

- months which includes making all arrangements completion of all formalities, market surveys and tie-ups etc.
8. The Break even point of the scheme has been calculated on full capacity utilization basis. considering 3 months working capital.
 9. Capacity may be achieved at the end of three years.

(V). Implementation Schedule:

The implementation of the project includes various jobs/ exercised such as procurement of technical know how transfer of technology market survey and tie ups preparation of project report selection of sitter, registration financing of project procurement of machinery and raw materials etc. recruitment of staff creation/commissioning of machines trial production and commercial production etc.

(VI) Production Detail and Process of Manufacture:-

The manufacturing of Tennis Balls involves various processes. First of all a solution is prepared by thoroughly masticating (kneading) rubber with variety of powders to give the required properties, e.g. strength, colour, and to enable it to cure and to make it softer to work and to ensure that subsequently the solution will flow correctly. The solution of this rubber compound is prepared with petroleum solvent. Then a formulation of rubber compound is prepared which contains Natural rubber, General purpose furnace' (GPF) black (a reinforcing filler), Clay, Zinc oxide, Sulphur, Diphenylguanidine (DPG) (an accelerator for the curative system), Cyclohexyl benthiazyl sulphenamide (HBS) (also an accelerator). This compound is then extruded to produce pellets. The pellets are loaded into a hydraulic press which forms them into hemispherical 'half-shells' and partially cures them, typically for 2 ½ min at 150°. The half-shells are removed from the press, joined together in a sheet by the 'flash', which has spread out of the moulds during the forming. The flash is removed by a hydraulic press fitted with cutting knives, which remove the half-shells from the sheet. The edge of the half shell is roughened (or buffed) with a grinding wheel to provide a key for the adhesive which is next applied. A vulcanising rubber solution is applied to the edge of the buffed half shell. For inflation of the ball, inflation chemicals like sodium nitrate and ammonium chloride are used which produce nitrogen during the moulding process. These cores are then cured in moulds. The core is then buffed to provide a rough surface to act as a key for the solution which is applied next. The cores are then coated with uniform layer of rubber solution. These coated cores are then covered with Melton cloth or Needle cloth. The balls are then placed in a moulding press and heated, curing together the rubber solution on the core and that on the back of the cloth. Finally, Tumbling the balls slowly through a steam laden atmosphere causes the cloth to fluff, giving a raised and softer surface and the ridge around the ball also disappears. The balls are then tested and graded brand name is marked.

(VII) Quality Control And Standard:

The balls can be produced as per international standards or Indian Standards IS: 2216- 19885. However, following parameters are very important for a Tennis Ball

Dimensions- The balls shall be of diameter 63.5 to 66.7 mm.

Mass- The mass of the balls shall be between 56.7 and 58.5 g.

Requirements- The ball shall have a uniform outer surface and shall be white or yellow in colour. If there are any seams, they shall be stitchless.

Bounce- The ball shall have a bounce of not less than 135 cm and not more than 147 cm when dropped from a height of 254 cm upon a 1:3:6 concrete base of 76 mm thickness.

Deformation- The ball shall have a forward deformation of more than 5.6 mm and less than 7.4 mm and return deformation of more than 8.9 mm and less than 10.8 mm at 8.165 kg load. The two deformation figures shall be the averages of three individual readings along three axis of the ball and no two individual readings shall differ by more than 0.8 mm in each case.

(VIII) Production Capacity (Per Annum)

| Item | Quantity | Value |
|-------------|---|----------------------------------|
| Tennis Ball | 6,00,000 Balls (@2000 balls per day, 25 days a month) | 90,00,000 (@ Rs. 15/- each ball) |

(IX) Power Requirement:

| | |
|---------------------------|-------|
| Electricity Load Required | 15 KW |
|---------------------------|-------|

(X) Financial Aspects:

| | | |
|------------|-----------------------------|-----------------|
| 1. | Fixed Capital | |
| (A) | Land & Building: | |
| | Rented Premises 2000 Sq ft | Rs. 10,000/- PM |

(B) Machins & Equipments:

| S.No. | Description | Nos. | Ind/Imp (Rs.) | Total Value |
|-------|---|------|---------------|-------------|
| 1. | Two Roll Mixing Mill 10"X24" | 1 | Ind | 350000.00 |
| 2. | Hydraulic Compression Moulding Press (Two daylight) – 18"X18" | 1 | Ind | 250000.00 |
| 3. | Motor & Starter | 2 | Ind | 25,000.00 |
| 4. | Half Cup moulding Die (16 cups) | 2 | Ind | 20000.00 |

| | | | | |
|------------|--|--------------|------------|--------------------|
| 5. | Full Ball Curing Die (16 Balls) | 2 | Ind | 30000.00 |
| 6. | Felt Dumbbell Cutting Press | 1 | Ind | 5000.00 |
| 7. | Bare Ball Abrading Drum with motor | 1 | Ind | 10000.00 |
| 8. | Cup Edges abrading Stone with motor | 1 | Ind | 7500.00 |
| 6. | Tools and Equipments | | | 10,000.00 |
| 7. | Furniture and office equipments | | | 50,000.00 |
| 8. | Generator | 1 | Ind | 20,000.00 |
| 9. | Installation and electrification charges | | | 20,000.00 |
| | | Total | | 7,97,500.00 |
| (C) | PRE OPERATIVE EXPENSES: Pre operative Expenses | | | 20,000.00 |
| | Total Fixed Capital (A+B+C) : | | Rs. | 8,17,500.00 |

2. Working Capital

(i) Staff and Labor (per month):-

| S.No. | Description | No. | Salary @ | Total Value (Rs.) |
|-------|--------------------------|-----|-----------------------------|-------------------|
| | i) Director/Properitor | 1 | 10,000 | 10,000.00 |
| | ii) Supervisor | 1 | 6,000 | 6,000.00 |
| | iii) Clerk cum Cashier | 1 | 5,000 | 5000.00 |
| | iv) Skilled Workers | 2 | 5,000 | 10,000.00 |
| | v) Semi skilled worker | 2 | 3,500 | 7,000.00 |
| | vi) Helpers | 4 | 3,500 | 14,000.00 |
| | vii) Sweeper (Part Time) | 1 | 1,000 | 1,000.00 |
| | ix) Watchman | 2 | 3,500 | 7,000.00 |
| | | | Total | 60,000.00 |
| | | | Add 20 % Perquisites | 12,000.00 |
| | | | Total | 72,000.00 |

(ii) Raw Material (per month):-

| S.No. | Description | Qty. | Rate(Rs.) | Value (Rs.) |
|-------|-----------------|---------|--------------|------------------------|
| i) | Natural Rubber | 2500 kg | 200 | 5,00,000.00 |
| ii) | CaCO3 | 2500kg | 10 | 25000.00 |
| iii) | Pigment | 10 kg | 350 | 3500.00 |
| iv) | Sulfur | 75kg | 15 | 1125.00 |
| v) | Accelerators | 25kg | 350 | 8750.00 |
| vi) | Other Additives | | | 5000.00 |
| | | | Total | Rs. 5,43,375.00 |

(iii) Utilities (P.M.)

| S.No. | Description | Qty. | Rate(Rs.) | Value (Rs.) |
|-------|-------------|------|--------------|----------------------|
| i) | Power | | | 10,000.00 |
| ii) | Fuel | | | 1,000.00 |
| iii) | Water | | | 500.00 |
| | | | Total | Rs. 11,500.00 |

(iv) Other Expenses (P.M.)

| S.No. | Description | Qty. | Rate(Rs.) | Value (Rs.) |
|-------|------------------------|------|--------------|----------------------|
| i) | Postage and Telephones | | | 1,000.00 |
| ii) | Transport | | | 2,000.00 |
| iii) | Consumable store | | | 500.00 |
| iv) | Sales Expenses | | | 2,000.00 |
| v) | Entertainment | | | 1,000.00 |
| vi) | Insurance | | | 1,000.00 |
| vi) | Other Contingencies | | | 2,500.00 |
| | | | Total | Rs. 10,000.00 |

(v) Working Capital (Per Month)

| Description | Value (Rs.) |
|--------------------------------|-----------------------|
| i) Salaries and wages | 72,000.00 |
| ii) Raw Material and chemicals | 5,43,375.00 |
| iii) Utilities | 11,500.00 |
| iv) Rent | 10,000.00 |
| V) Other Expenses | 10,000.00 |
| Total | Rs 6,46,875.00 |

(vi) Working Capital (for Three Months) :-

Rs. 6,46,875X3 = 19,40,625.00

(vii) Total Capital Investment:-

| | |
|-------------------------------|------------------------|
| Fixed capital: | 8,17,500.00 |
| Working capital for 3 months: | <u>19,40,625.00</u> |
| Total | Rs 27,58,125.00 |
| Say | Rs 27,58,000.00 |

(viii) Cost of Production (Per Annum):-

| | |
|---|------------------------|
| (a) Total Recurring expenditure | 77,62,500.00 |
| (b) Depreciation on Machinery @ 10% | 73,750.00 |
| (c) Depreciation on Tools and Equipments @20% | 2,000.00 |
| (d) Depreciation on office euip. and Furniture etc. @ 20% | 10,000.00 |
| (e) Interest on Total Capital Investment @ 14% | <u>3,83,180.00</u> |
| Total: | 82,31,430.00 |
| Say: | Rs 82,31,000.00 |

(ix) Total Sales (Per Annum):-

(x)

| Sl. No. | Item | Rate per pc. | Value (Rs.) |
|---------|-----------------------|--------------|--------------|
| 1. | 6,00,000 Tennis Balls | 15/- | 90,00,000.00 |

(xi) Profitability(Per Annum):-

Sales - Cost of Production
90,00,000 – 82,31,000= **Rs 7,69,000**

(xii) Net Profit Ratio:-

$$\frac{\text{Profit} \times 100}{\text{Sales per Annum}}$$
$$\frac{7,69,000 \times 100}{90,00,000}$$
$$= 8.54 \%$$

(xiii) Rate of Return:-

$$\frac{\text{Profit} \times 100}{\text{Total investment}}$$
$$\frac{7,69,000 \times 100}{27,58,000}$$
$$= 27.88\%$$

(xiii) Break Even Point: -

Fixed Cost (per annum)

| | |
|--|--------------------|
| (a) 40 % of Salaries | 3,45,600.00 |
| (b) 40 % of Utilities | 55,200.00 |
| (c) 40 % of other expenses | 48,000.00 |
| (c) Depreciation | 85,750.00 |
| (d) Rent | 1,20,000.00 |
| (d) Interest on total capital Investment | <u>3,83,180.00</u> |

Total

Rs 10,37,730.00

Break Even Point = $\frac{\text{Fixed Cost} \times 100}{\text{Fixed cost} + \text{profit per year.}}$

$$= \frac{10,37,730 \times 100}{10,37,730 + 7,69,000}$$

57.43%

List of Machinery and Raw Material Suppliers

Bharaj Machineries Pvt. Ltd.
Plot No. 12 & 13, Survey No 66, Hissa No. 1/1,
Naik Pada, Village-Waliv,
Taluka: Vasai (East)

Premier Engineers
Post Box No. 11, Opp. Rly. Microwave Tower,
Sirhind - 140406, Punjab, India

JRD Rubber & Plastic Technology Pvt. Ltd.
K-49, Model Town II,
Delhi - 110009, India

Santec Group
Plot No. 92/6, Road No. 4,
Mundka Udyog Nagar, Mundka Extension,
Delhi - 110041, India

Uttam Rubber Machinery (P) Ltd.
B-61/3, Maya Puri Indl. Area, Phase II
New Delhi - 110064, (INDIA)

Leather Division

MSME Development Institute 34,
Industrial Estate,
Nunhai, Agra-282006
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