

# Suede Leather

PRODUCT CODE	: 292001
QUALITY AND STANDARDS	: IS 8170-1983
PRODUCTION CAPACITY	: Qty. : 60,000 Peices (per annum) Value: 5,04,00,000
MONTH AND YEAR OF PREPARATION	: January, 2003
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## INTRODUCTION

Suede Leather can be manufactured from cow hide, goat skin, buffalo hide and even from sheep skins. This leather is finished on the flesh side and has a velvety nap. The velvety nap on the flesh side is the beauty of this leather. Shoe Upper, garment and other fancy products are manufactured from this leather but mostly it is manufactured from cow hide or goat skins.

## MARKET POTENTIAL

There exists a very good market potential for the Suede Leather both in the domestic market as well as in the overseas market. The use of this leather in making fashionable leather products is increasing day-by-day. There is an enormous export potential in the

international market for this leather especially in the developed countries like USA, Canada, Great Britain, Germany, Italy, Australia, Japan and many other countries. Although the exact demand figure of export for this leather is not available now, there is a great hope for an expanding market for this kind of leather throughout the globe. India has got very rich resources in terms of availability of skilled manpower, advanced technical know-how and highest raw-material resources i.e. raw-hides and skins. With this background India is now among the top four global players in the leather trade, according to a recent FAO survey.

There are a number of shoes and leather garments manufacturing units throughout the country. These units are manufacturing footwear and leather garments from suede leather.

## BASIS AND PRESUMPTIONS

1. The production capacity of Suede Leather given in this profile is based on single shift basis for 300 days in a year of 8 hours working per day.
2. Three years will be required to achieve 90% capacity utilisation.
3. Labour wages are based on prevailing rates in the State.
4. Rate of interest on capital investment is based on banks or financial institutions interest rates.
5. The period of loan to be recovered by the bank or financial institutions as per their norms.
6. The cost of machinery and equipment are based on the prevailing rates at the time of preparation of project profile.
7. The cost of land, construction, raw materials, chemicals etc. may vary from time to time and place to place.

## IMPLEMENTATION SCHEDULE

Sl. Activity No.	Period (in months)
1. Registration and other formalities	1
2. Land acquisition and calling of quotations	2
3. Construction	6
4. Machinery purchasing and installation	6
5. Trial production	3

## TECHNICAL ASPECTS

### Process of Manufacture

#### Raw Material

Wet salted hair-slip quality cow hides.

**Soaking:** The hides are washed thoroughly and soaked in a paddle containing  $\text{Na}_2\text{S}$  (Sodium Sulphide) 0.2% and water 400-500%. The hides are kept in the paddle overnight and next morning checked for proper soaking and then washed in running water. The water is drained out and soaked weight is taken.

**Liming (in drum):** The following chemicals are taken on soaking weight-water 300%. Sodium Sulphide 5%, Staked lime 4 to 6%, salt 3%. Total liming is done for 18-20 hours and the drum is run 2-3 minutes after every two hours. The stock is rinsed in soft water for 10 minutes. The hides are fleshed and the weight determined.

**Deliming:** The fleshed pelt is washed in running water in drum for 20 minutes. The water is drained out and the following chemicals are taken on pelt weight. Ammonium sulphate 1.2-1.7%, Sodium bi-sulphate 0.4-0.6% water 250%.

The drum is run for 30-40 minutes and checked by phenolphthalein and test should show 20-25% red. Drain out the water and wash thoroughly with 2 changes of water for 20 minutes.

**Pickling:** The pelt are picked with the following chemicals: Water 30-60%, salt 8%, Drum run for 10 minutes and then add  $\text{H}_2\text{SO}_4$  (1.84 Conc.) 1.5%.

The acid is diluted with water and added in 3 installments after the interval of 10 minutes and after last instalment

drum run for 45 minutes and then Formaldehyde 0.5% is added.

Drum run for 5 minutes and checked pH of pelt with bromophenol blue indicator, which should be 2.3 to 3.0 and the PH of the float be about 8.

*Chrome Tanning:* Half of the pickle liquor is drained out and the hides are run for 15 minutes and B.C.S. powder 3%, sodium Acetate 0.5% is added. The following chemicals are fed in two installments after the interval of 15 minutes and drum run for further 2-2.5 hours. Next day Samming, setting, splitting and shaving 1.3-1.4mm is done. The shaved leather is washed for 10 minutes in warm water of 30-35°C.

*Retannage:* Basic Chrome crystal (33%) 5% (without float-dissolved 1:1, sodium formate 1%, Let the drum run for 10 minutes and then add sodium formate 0.5%, and Sodium bi-carbonate 0.7%(dissolved 1.10) the drum is run for 45 minutes and pH should be 4.5-4.6 and then add wattle extract powder 4% and Tanigan PR(Bayer) 1%. The drum is run for 45 minutes and rinsed for 5 minutes.

*Dyeing and Fat Liquoring:* Acid dye in powder 3%, the drum is run for 25 minutes and 100% water is added. Drum run for 20 minutes and Sandozol KS 6% is added. Drum run for 20 minutes and taffnilon 210A-1% is added. Drum run for 20 minutes and then horse up. The leather are sammed, set up saw dusted, staked, toggled, buffed on grain side with 400 grit emery paper, dust off and dry miled.

#### Quality Control and Standards

1. Indian Standard Specification IS 8170 : 1983 will be used in maintaining standards for cow suede leather.

2. As per the buyer's specification.

#### Production Capacity

Quantity : 60,000 cow hides.

Value : Rs. 5,04,00,000

Motive Power 130 HP.

#### Pollution Control

The tanning process require a huge quantity of water for processing and generates a large quantity of waste water. Non-degradable organic matter and organic salt. Most of the chemicals used in the tanning process are bio-non-degradable and pose a serious threat to the environment. Thus the tannery waste water contains a variety of different substances like salt, Sulphide, chrome sulphate, solvents, dyes and other materials.

In view of the above, the leather tanning industry is identified as the most highly polluting industry and marked as "RED CATEGORY" in the list of polluting industry.

Therefore, the unit requires an "Effluent Treatment Plant" of its own in the unit premises.

For the treatment of tanning waste water the following steps may be adopted:

1. Change in process, segregation and recovery, reuse of water.
2. Primary treatment of waste water.
3. Secondary treatment of the effluents.
4. Disposal of solid wastes.

Since the complete tanning waste treatment is very expensive and it is also not possible for any small-scale unit, therefore, the tanning waste treatment system has been classified in to two sections:

### 1. Primary Treatment

### 2. Secondary Treatment

The primary treatment should be done by respective tanning unit, and secondary treatment should be done by Municipalities corporations, Waste Treatment Organisation.

The basic objectives of the primary treatment plant are screening, sedimentation, reducing effluents volume, settling, filtration and evaporation.

### Energy Conservation

- i) Common drive system to run the paddles may be adopted.
- ii) Thorough checking of the motors, driving system etc. should be done from time to time.

## FINANCIAL ASPECTS

### A. Fixed Capital

(i) Land and Building		(Rs.)
a) Land 1500 Sq. Meter		15,00,000
b) Building (Built-up Area)		
1. Office Stores etc. 150 sq. mtr.		3,00,000
2. Working Shed 800 sq.mtr.		20,00,000
3. Well Overhead Tank, Water connection etc.		2,00,000
	Total	40,00,000
Effluent Treatment Plant (Primary)		2,50,000

### (ii) Machinery and Equipments

Sl. No.	Description	Specif-ication	Qty.	Value (Rs.)
1.	Wooden Paddle with motor and starter (10 HP)	8'x7'	2	2,00,000
2.	Tanning drum with motor and starter (10 HP)	8x7	2	3,00,000

Sl. No.	Description	Specif-ication	Qty.	Value (Rs.)
3.	Fleshing Machine (15 HP)	1800mm width	1	2,00,000
4.	Experimental Drums (5 HP)	3x3	1	50,000
5.	Double width Shaving Machine	1800mm width	1	4,00,000
6.	Dyeing Fat Liquoring Drum (10 HP)+ One Dry Drum		2	3,00,000
7.	Stacking Machine	S/o comb type	1	1,00,000
8.	Toggle Chamber	10 plates	1	1,00,000
9.	Measuring Machine	1800mm width	1	2,00,000
10.	Generator Set		1	2,00,000
11.	Working Table, Toggle etc.		1	50,000
12.	Weighing Scale		1	50,000
13.	Buffing Machine		1	1,00,000
14.	Testing Equipment		LS	50,000
15.	Office Equipment and Furniture		LS	1,00,000
16.	Electrification and Installation		LS	2,50,000
		Total		26,50,000

(iii) Total Fixed Capital		(Rs.)
1.	Land and Building	40,00,000
2.	Primary Effluent Treatment Plant	2,50,000
3.	Machinery and Equipments	26,50,000
	Total	69,00,000

## B. Working Capital (per month)

### (i) Staff and Labour (per month)

Sl. No.	Designation	No.	Salary (Rs.)	Total (Rs.)
1.	Manager	1	10,000	10,000
2.	Production Manager	1	8,000	8,000
3.	Supervisor	1	5,000	5,000
4.	Clerk-cum-Accountant	1	4,000	4,000
5.	Store Keeper	1	4,000	4,000
6.	Peon	1	2,000	2,000
7.	Watchman	1	2,000	2,000
8.	Skilled Workers	6	4,000	24,000
9.	Semi-skilled Workers	7	3,000	21,000
10.	Machine Operators	5	4,000	20,000
11.	Fitter/Electrician	1	3,000	3,000
12.	Unskilled Workers	6	2,000	12,000
			Total	1,15,000
			Add perquisites @ 20% on Salary	23,000
			Total	1,38,000

### (ii) Raw Material (per month)

Sl. No.	Description	Quantity	Rate (Rs.)	Total (Rs.)
1.	Wet Salted Cow Hides	5000 pieces equivalent to 1,25,000 Sq.Ft.	20 per Sq.Ft.	25,00,000
2.	Processing Chemicals	L.S.	6 per Sq.Ft.	7,50,000
			Total	32,50,000

### (iii) Utilities (per month)

Sl. No.	Description	Amount (Rs.)
1.	Power	30,000
2.	Fuel/Diesel	10,000
	Total	40,000

### (iv) Other Contingent Expenses (per month)

Sl. No.	Description	Amount (Rs.)
1.	Postage and Stationery	5,000
2.	Telephone	5,000
3.	Transportation Charges	5,000
4.	Consumable Stores	5,000
5.	Repair and Maintenance	5,000
6.	Insurance	5,000
7.	Other misc. expenditure	5,000
	Total	35,000

### (v) Total Working Capital (per month)

Sl. No.	Description	Amount (Rs.)
1.	Staff and Wages	1,38,000
2.	Raw Material	32,50,000
3.	Utilities	40,000
4.	Other contingent expenditure	35,000
	Total	34,63,000

### (vi) Working Capital (for 3 months)

Working Capital for 3 months	1,03,89,000
34,63,000 x3	
Total	1,03,89,000

## C. Total Capital Investment

Sl. No.	Description	Amount (Rs.)
1.	Fixed Capital	69,00,000
2.	Working capital (3 months)	1,03,89,000
	Total	1,72,89,000

## FINANCIAL ANALYSIS

### (1) Cost of Production (per year)

Sl. No.	Description	Amount (Rs.)
i)	Working Capital	4,15,56,000
ii)	Depreciation on Building @ 5%	1,25,000
iii)	Depreciation on machinery and equipments @ 10%	2,50,000
iv)	Depreciation on Equipment and Fixture @ 20%	30,000
v)	Interest on Total Capital Investment @ 15%	25,93,350
	Total	4,45,54,350

## (2) Turnover (per year)

Sl. Items No.	Quantity	Rate (Rs.)	Value (Rs.)
1. Grade I-2%	30,000 Sq.ft.	50	15,00,000
2. Grade II-20%	3,00,000 Sq.ft.	40	1,20,00,000
3. Grade III-40%	6,00,000 Sq.ft.	35	2,10,00,000
4. Grade IV-30%	4,50,000 Sq.ft.	30	1,35,00,000
5. Rejection 8%	1,20,000 Sq.ft.	20	24,00,000
		Total	5,04,00,000

## (3) Net Profit (Before Taxation) (per year) (Rs.)

Profit = Turnover – Cost of Production

Turn Over	5,04,00,000
Cost of Production (-)	4,45,54,350
Total	58,45,650

$$\begin{aligned} \text{B.E.P.} &= \frac{\text{Fixed cost} \times 100}{\text{Fixed cost} + \text{Net Profit}} \\ &= \frac{40,56,750 \times 100}{40,56,750 + 58,45,650} \\ &= 40.96\% \end{aligned}$$

## (4) Net Rate of Return on Investment

$$\begin{aligned} &= \frac{\text{Net Profit per year} \times 100}{\text{Turnover per year}} \\ &= \frac{58,45,650 \times 100}{1,72,89,000} \\ &= 33.8\% \end{aligned}$$

## (5) Rate of Net Profit Ratio

$$\begin{aligned} &= \frac{\text{Net Profit Per year} \times 100}{\text{Total Investment}} \\ &= \frac{58,45,650 \times 100}{5,04,00,000} \\ &= 11.60\% \end{aligned}$$

## (6) Break-even Point

Fixed Cost

Sl. Description No.	Amount (Rs.)
a) Depreciation on Building @ 5%	1,25,000
b) Depreciation on Machinery @ 10%	2,50,000
c) Depreciation on Equipments and Furniture @ 20%	30,000
d) Interest on capital investment	25,93,350
e) Insurance	60,000
f) 40% of Salary and Wages	6,62,400
g) 40% of other contingent expenditure and utilities	3,36,000
Total	40,56,750

## Addresses of Machinery and Raw Material Suppliers

1. M/s. Bengal Machinery Co. 9-A, New Tangra Road, Kolkata.
2. M/s. Annapurna Engg. Works, F-10/2, MIDC, Shirol, Kolhapur.
3. M/s. Shalimar Engg. Works, 12-B, Prabhorah Sarkar Lane, Kolkata-15.
4. Prototype Development and Training Centre, B-24 Guindy Estate, Ekkaduthangal, Chennai-9.
5. M/s. Hindustan Engg. Works, Jawahar Nagar, Kolhapur.
6. M/s. Soloi Engg. Works, 43/420, North Usman Road, Chennai-17.
7. M/s. New Bengal Engg. Works, 9A, New Tangra Road, Kolkata-46.
8. M/s. Rajam brothers Engg. Pvt. Ltd., 57, Tirupalli Street, Chennai-1.
9. M/s. India Tanning Machinery Corporation, 36-37, Angappa Meken Street, Chennai-1.

10. M/s. Elgi Equipment Ltd.  
24/16, Pantheon Road, Egmore,  
Chennai-6.

11. Wet salted cow hides are available  
locally in Kanpur.

#### Raw Material and Chemical Suppliers

1. M/s. Tan India Wattle Extract  
Corporation,  
95/A, Mound Road, Chennai-16.

2. M/s. leather Aids and Auxillaries,  
13, V.V. Koil Street, Chennai-3.

3. M/s. Ausuchem,  
12, Bhuvan Building, 422,  
Veer Savarkar Marg,  
Prabhadevi, Mumbai-25.

4. M/s. Leather Chemical Industries,  
1-A, New Alipur, Kolkata.

5. M/s. Asiatic Chemical Company,  
26/46, Birhana Road, Kanpur.

6. M/s. BASF India Ltd.,  
Tikon House,  
Mumbai-11.

7. M/s. BASF India Ltd.,  
Tikon House, Jajmau,  
Kanpur-10.

8. M/s. Colour Chem Ltd.,  
Jajmau, Kanpur-10.

9. M/s. Indofil Chemicals Ltd.,  
Nirlon House,  
Dr. Annie Besant Road,  
Mumbai-20.

10. M/s. LIDCAL Enterprises,  
188, Pardevan Purwa,  
Kanpur-10.

11. M/s. Tanpel International, Shop  
No.2, No.296, Tiwaripur,  
Lal Bangla, Kanpur.

12. M/s. L.D. Chemicals,  
461-D, Defence Colony,  
Kanpur-10.