

# PU Laminated Split Leather

PRODUCT CODE	: N.A.
QUALITY AND STANDARDS	: As per customer's specification
PRODUCTION CAPACITY	: 90,000 sides of PU Laminated Split Leather equivalent to approximately 1350000 sq.ft. (per annum)
QUANTITY	: Value: Rs. 3,37,50,000
MONTH AND YEAR OF PREPARATION	: December, 2002
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## INTRODUCTION

PU laminated Split Leather is a modern development in leather manufacturing field which has presently a great demand in the market. This leather has gained wide popularity in the fashion world and is used for making a wide variety of fancy leather products. Considering the low market price of the splits from cow and buffalo hides, its huge availability in the local market and a substantial market potential, the project on manufacturing the PU laminated Split leather can be said to have a very bright prospect.

## MARKET POTENTIAL

There exists a very good market potential for the PU laminated Split Leather both in the internal market as well as in the overseas markets. 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 specially 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.

## BASIS AND PRESUMPTIONS

1. The unit would work on single shift basis of 8 hours for 25 days in a month and 300 days per annum.
2. Full capacity utilization is envisaged to be achieved within a period of one year.

3. Wages and salary is considered on the basis of prevailing local rates.
4. Rate of interest on investment 15%
5. Margin money 25%
6. Pay-back period of the product: About 3 years.

### IMPLEMENTATION SCHEDULE

The implementation schedule is considered to be about one year. This will be necessary taking into account the possible time required for obtaining NOC from the State Pollution Control Board, Provisional Registration, preparation of Project Report and its appraisal, permanent registration, taking loan/finance from the bank, arrangement of land, building, machinery and equipments and other working infrastructure, establishing rapport with the trade, industries associations, trial run operation etc.

### TECHNICAL ASPECTS

#### Process of Manufacture

The splits taken out from the chrome tanned wet blue leathers (buffalo or cow) are used for making the PU Laminated Split leather. The process of manufacture of the PU Laminated Split leathers from the wet blue splits is given below:

At first, the wet blue split leathers are shaved in the shaving machine. The thickness is kept at 0.9 to 1.0 mm. Then the weight of the shaved splits are taken. This weight will be used for measuring the quantity of chemicals to be added in the subsequent processes.

*Acidification:* The wet blue splits are taken into the drum and acidified as follows:

Acetic Acid	0.25%
Water	200%

The drum is run for 10-15 minutes.

*Re-chroming:* The re-chroming is done in the same bath and the process is run as follows:

Basic chrome sulphate	3% – 40 mins
Add: Sodi-bi-carb	0.5% – 30 mins

The pH of the bath is adjusted to 4.0 and then the re-chromed wet blue splits are washed in running water for 10 min.

*Neutralisation:* The neutralisation of the wet blue splits is done as follows:

Sodi-bi-Carb	0.5%
Sodium Formate	0.5%
Water	200%

The drum is run for 40 minutes.

The neutralisation is checked with bromocresol green and the pH is adjusted at 5.0. The bath is then washed for 10 mins. And a new float of water is taken in the drum..

*Retanning:* This process is followed as given below:

Cationic Fat liquor	2%
Add: Wattle extract	2%
Basyntan DI (Syntan)	1%

The drum is run for 30 mins.

The retanned splits are washed in running water for 5 to 10 mins and then fresh water is taken into the drum.

*Fat Liquoring:* The fat-liquoring is done as follows:

Water	200% ( 55° – 60°C)
Sulphited vegetable oil	4 %
Synthetic Oil	2%
Preservative	0.25%

The oil emulsion is added to the drum which is run for about one hour. The exhaustion of the fat is checked. Then 0.5% Acetic Acid is added for fixing the fat after which the drum is run for 30 mins. more.

*Add: Preservative - 0.25%*

The drum is run for 20 mins.

The materials are then washed for 10 mins. in running water and then drained out and piled up in the horse overnight. Next day, the splits are sammed, set and dried. Then the dried split crusts are conditioned in the wet saw dust, toggled and staked in the staking machine. The staked splits are then trimmed off. Then buffing and snuffing of the splits are done on the flesh side and grain side respectively followed by dusting-off operation. The splits are now ready for finishing operation for making PU Laminated Split leather.

*Finishing:* At first a coat of latex solution or Polyurethane coat is applied on the surface of the split on the grain side and dried. A hair-cell print is applied on this surface by the hydraulic press. Then a polyurethane (PU) foil is put over the grain side surface of the split leather and plated by the hydraulic press under controlled temperature and pressure. The colour of the PU Laminated split leather varies which is to be selected according to the choice of the customers.

PU laminated Split Leather thus produced is finished at the edges by trimming the excess PU film. Finally, the area of the leather is measured and the

leathers are packed for despatch. For the purpose of this Project, an average area of 15 sq.ft. per side of the split leather has been considered.

#### Quality Control and Standards

As per customer's Specification.

#### Production Capacity

- Quantity: 90,000 sides of PU Laminated Split leathers. One side represents half of the full cow or buffalo leather, with an average area of 15 Sq.ft, each side. So, Average total Production = 1350000 Sq.ft. (Approx.) (per annum)
- Value: Rs. 3,37,50,000

Motive Power 100 HP.

#### Pollution Control

The pollution control is now-a-days one of the most important environmental issues and this has to be given utmost attention. This is because, the effluents coming out of the tanning processes are very toxic and they are likely to affect the flora and faunae of water, if disposed off elsewhere or in the river. Hence, for running such tanning unit, a No Objection Certificate (N.O.C.) has to be obtained from the Pollution Control Board. Also, suitable measures have to be taken for pollution control by making arrangement for treatment of effluents through common effluent treatment plant.

#### Energy Conservation

Conservation of energy is an important area to be looked into with utmost care. Lot of energy is spent in the tannery in the form of electricity and fuel. Hence, there exist a lot of scope for conservation of electricity and fuel

which are among the limited resources required for running an industrial unit. In order to take appropriate measures towards energy conservation, the following steps need to be taken:

- 1) Maintenance department will be properly geared up to ensure proper maintenance of all the machines and the electrical system.
- 2) Common drive system will be made to run the paddles, drums and other machines.
- 3) Workers are to be properly trained and made aware to save the energy.

## FINANCIAL ASPECTS

### A. Fixed Capital

(i) Land and Building	Amount(Rs.)
Total land area – 1000 sq.mtr.	10,00,000
Building	
1) Office, stores etc. 150 sq.mtr.	5,00,000
2) Working shed 600 sq.mtr.	20,00,000
Total	35,00,000

#### (ii) Machinery and Equipments

Sl. No.	Description	Ind./ Imp.	Qty. (Nos.)	Value (Rs.)
1.	Tanning Drums including 15 HP motor, starter etc. Size: 8'x6'.	Ind.	2	3,60,000
2.	Single width shaving Machine (300mm Width) 5 HP motor.	Ind.	2	1,20,000
3.	Reversible setting out machine, Size:5'-0" (1500 mm) with one Gear Box, Panel Box, Foot switch 5HP. 960 RPM. AC motor, One 15 HP 1440RPM AC Motor, starter etc.	Ind.	1	1,65,000
4.	Slocomb staking Machine with 7.5 HP Motor, starter etc.	Ind.	2	90,000

Sl. No.	Description	Ind. Imp.	Qty. (Nos.)	Value (Rs.)
5.	Single width Buffing Machine with 5HP Motor and starter etc.	Ind.	2	1,10,000
6.	One Dusting off M/c.	Ind.	1	25,000
7.	Toggle chamber with 10 plates.	Ind.	1	1,25,000
8.	Measuring Machine	Ind.	1	2,00,000
9.	One generator set	Ind.	1	1,50,000
10.	One spray booth Size: 9'x5' with top Booth cover, 2 nos. Of 18" exhaust fans and starter	Ind.	1	35,000
11.	Hydraulic Press	Ind.	1	10,00,000
12.	Tools and equipments	Ind.	L.S.	25,000
13.	Electrification and installation @ 10% of the cost of Machinery			2,38,000
14.	Furniture and fixtures			2,00,000
Total cost of Machinery and equipment				28,43,000
(iii) Pre-operative Expenses				25,000
Total Fixed Capital (i+ii+iii)				63,68,000

### B. Working Capital

#### (i) Personnel (per month)

Sl. No.	Designation	No.	Salary (Rs.)	Total (Rs.)
<i>Administrative</i>				
1.	Tanner-cum-Manager	1	10,000	10,000
2.	Supervisor	1	5,000	5,000
3.	Accountant-cum-clerk	1	4,000	4,000
4.	Watchman	2	2,500	5,000
5.	Sweeper	1	2,000	2,000
<i>Technical</i>				
6.	Skilled Worker	12	4,000	48,000
7.	Semi-skilled Worker	6	3,000	18,000
8.	Helper	4	2,000	8,000
			Total	1,00,000
			<i>Perquisites @ 20%</i>	20,000
			Total	1,20,200

(ii) Raw Materials (Including Packing Materials)  
(per month)

Sl. No.	Description	Qty.	Rate (Rs.)	Total (Rs.)
1	Wet Blue splits	7500 sides of splits equivalent to 112500 sq.ft. (approx.).	12 per s.ft.	13,50,000
2.	Processing Chemicals	L.S.	6 per sq.ft.	6,75,000
Total				20,25,000

(iii) Utilities (per month)		Amount (Rs.)
a)	Power	30,000
b)	Fuel cost	10,000
c)	Water	5,000
Total		45,000

(iv) Other Contingent Expenses (per month)		Amount (Rs.)
a)	Postage and stationery	5,000
b)	Transport charge.	5,000
c)	Telephone	5,000
d)	Consumable stores	5,000
e)	Advertisement and publicity	2,000
f)	Insurance	5,000
g)	Selling expenses	5,000
h)	Miscellaneous expenses	10,000
Total		42,000

(v) Working Capital (per month)		(Rs.)
i)	Personnel	1,20,000
ii)	Raw-materials	20,25,000
iii)	Utilities	45,000
iv)	Other contingent expenses	42,000
Total		22,32,000

(vi) Working Capital for 3 months  
Rs. 3 x 22,32,000 = Rs. 66,96,000

**C. Total Capital Investment**

a)	Fixed Capital	Rs. 63,68,000
b)	Working capital for 3 months	Rs. 66,96,000
Total		Rs. 1,30,64,000

**MACHINERY UTILISATION**

The machinery utilisation is anticipated to be 75% to 80% of the installed capacity. The effort should be made to maximum utilization of the machinery.

**FINANCIAL ANALYSIS**

(1) Cost of Production (per annum)		(Rs.)
a)	Total Recurring expenses	2,67,84,000
b)	Depreciation on Building @ 5%	1,25,000
c)	Depreciation and equipment on Machinery @ 10%	2,64,300
d)	Depreciation on furniture @ 25%	50,000
e)	Interest on Capital Investment @ 15%	19,59,600
Total		2,91,82,900

## (2) Turnover (per annum)

Item	Qty. Sq.ft.	Rate (Rs.)	Value (Rs.)
PU Laminated Split Leather	13,50,000	25 per sq.ft.	3,37,50,000

## (3) Net Profit (per annum)

Turnover – cost of production  
= Rs. 45,67,100

## (4) Net Profit Ratio

$$= \frac{\text{Net Profit per annum} \times 100}{\text{Turnover}}$$

$$= \frac{45,67,100 \times 100}{3,37,50,000}$$

$$= 13.53\%$$

## (5) Rate of Return

$$= \frac{\text{Net profit per annum} \times 100}{\text{Investment}}$$

$$= \frac{45,67,100 \times 100}{1,30,64,000}$$

$$= 34.96\%$$

## (6) Break-even Point

(i) Fixed Cost (per annum)	Amount In (Rs.)
a) Depreciation on building	1,25,000
b) Depreciation on Machinery and Equipments	2,64,300
c) Depreciation on furniture	50,000
d) Interest on Capital	19,59,600
e) Insurance	60,000
f) 40% of salary/wages, utilities and other contingent expenses (Excluding Insurance)	9,69,600
Total	34,28,500

(ii) Net Profit (per annum) Rs. 45,67,100

## B.E.P.

$$\begin{aligned}
 &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}} \\
 &= \frac{34,28,500 \times 100}{34,28,500 + 45,67,100} \\
 &= 42.88\%
 \end{aligned}$$

## Addresses of Machinery and Equipment Suppliers

1. M/s. Prototype Development and Training Centre  
Sector – B/84,  
Guindy Industrial Estate,  
Chennai – 600 097.
2. M/s. The Bengal Machinery Co.(Pvt.) Ltd.  
9A, New Tangra Road,  
Kolkata – 700 046.
3. M/s. Annapurna Enterprises  
F-10/2, HIDC, Shirol, Kolhapur – 416 122.
4. M/s. Bharat Udyog,  
A-49, MIDC Industrial Area,  
Shirol, Kolhapur.

5. M/s. Atlanta Trading Co.(P) Ltd.  
Atur House, Worli Naka,  
Mumbai.
6. M/s. Solai Engg. Works  
48/42-C, North Usman Road,  
T. Nagar, Mehim,  
Mumbai – 400 017.

## Raw Material Suppliers

1. M/s. Asia Tannery  
Jajmau,  
Kanpur (UP).
2. M/s. Zaz Tannery  
Jajmau,  
Kanpur(UP).
3. M/s. T. Abdul Walhid and Company  
26, Vepery High Road,  
Chennai – 600 013.
4. M/s. Alam Tannery  
3, Gulam Jilani Khan Road,  
Kolkata – 700 039.
5. M/s. Indofil Chemical Ltd.  
Nirlon House,  
Dr. Annie Besant Road,  
Mumbai-400025.
6. M/s. Leather Chemical and Industries Ltd.  
4-1, New Alipur,  
Kolkata.
7. M/s. BASF Chemicals (P) Ltd.  
Anwarganj,  
Kanpur(UP).
8. M/s. Allied Resin Chemicals Ltd.  
134/1, M.G. Road,  
Kolkata – 700 011.