Upholstery Leather

PRODUCT CODE	:	290609003
QUALITY AND STANDARDS	:	As per buyer's specification
PRODUCTION CAPACITY	:	Qty. : 30000 pieces of Upholstery leather i.e 7,50,000 Sq ft. (per month) Value: Rs. 3,60,00,000
MONTH AND YEAR OF PREPARATION	:	January, 2003
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Introduction

Upholstery leather manufacture , like many other branches of the industry, is in a rapid state of flux at this time. Although the manufacture of upholstery leather has been characterized for years by rocker tannage, with vegetable extracts, the majority of the industry has shifted or is in the process of shifting to lime-split drum-tanned upholstery leather.

At times mineral salts such as chrome or zirconium may be used alone or in combination with the vegetable tannins. The primary purpose of such usage is to achieve certain leather effects such as softness but also to "tie-down" the excess vegetable tannins and thus prevent migration which might lead to a colour change of light coloured finishes.

The finishing of upholstery leather is also undergoing major changes which have been largely brought about the specifications applied by the automotive industry in efforts to improve the surface characteristics of the leathers used. Other changes in finish materials have been brought about the extensive use of white and pastel leather, both for furniture and automobiles.

The major grades of upholstery are :

i. Full top grains (top grain, full grain and full top grain)
ii. Top grains snuffed (corrected top grains or hand buffs)
iii. Deep buffs
iv. Splits

Market Potential

Because of the expanding market of the leather products in the domestic market as well as in the export market, a large number of entrepreneurs have started manufacturing leather products like different types of industrial needed leather products. There are large number of furniture manufacturers, passenger automobile, table top and decorative product manufacturers. There is a good

demand of upholstery leather due to good export markets.

BASIS AND PRESUMPTIONS

1. This project profile is worked out on 75% efficiency utilization of its manufacturing capacity and taken 300 working days in a year on single shift basis of 8 hours a day.
2. Time period for achieving full/ envisaged capacity within three years after production.
3. Arrangement for labour wages has been considered as per minimum Labour wages as per rules of State Govt.
4. Interest rate for capital investment has been charged @ 15%.
5. Margin money /state incentives has been calculated as per rules given by Govt of Delhi.
6. Pay back period of the project after one year from its production and total repayment of fixed capital within 10 years.
7. The cost of land and building has been calculated as per rules of State Govts.
8. The sale prices are ex-godown including packing, sale commission upto 33% has been added by the entrepreneur before fixing the price.
9. Only upholstery leather with sufficient demand have been included in the scheme. The entrepreneur can also include the other type of leather, if demand arises.

IMPLEMENTATION SCHEDULE

Every project is required some specific time frame for its commercial production various schedules for its completion are as under : -

1. Selection of products: An entrepreneur should select their product range for manufacturing within 15 to 30 days.

2. Provisional SSI registration: After selection to obtain the provisional SSI registration from the Commissioner of Industries/Distt Industries Centre/ Director of Industries of the area it will take about two or three days after submitting the required documents

3. Project report: After provisional SSI registration, project report is prepared through industrial consultant or Govt departments like Small Industries Service Institute etc. within one week after collecting the quotation/rate list from machinery and raw material suppliers.

4. Finance: Apply to financial organizations like State Financial Corporation/National Small Industries Corporation Ltd., for machinery and nationalized banks for working capital. This financial exercise will take 3 to 5 months time approximately.

5. Factory construction: After taking or sanction of the loan from the above organization, construction of factory building is very important step and it will take 6 to 8 months time. In the meanwhile order should be placed to the machinery manufacturers as well as raw material suppliers.

6. Trial production: After that machine should be installed within a month's time for production. Trial production should be over within one or two weeks time and finally commercial production in above mentioned period for its marketing.

7. Man power: In between machine installation, labour should be recruited for manufacturing the product and contact to work for its end product. Develop commercial relation with concerned official related with the whole process.

Technical Aspects

Process of Manufacture

Raw material: Wet sated cow hides.

Soak: Soaked in a drum for 1 hour and then drum at 3 rpm in running cold water for 20 minutes using a lattice door.

Lime: suspend 2 days or rocking frames in old lime liquor mended with 0.25% lime and 0.2% sodium sulphide (fused) on volume of liquor.

Liquor: Pelt 5:1 ratio. Follow by 4-6 days in new lime containing 1% lime suspension and 0.1% soda ash. This new lime liquor becomes the old lime liquor after use.

Unhair: By machine.

Flesh: by machine. Examine hides to check selection.

Plump for 1-2 days in 1% lime suspension

Split: to required substance.

Surface delime: in a paddle,using 0.5% ammonium chloride or sulphate (% on grain split weight at 33°C.

Bate: 0.5% weak pancreatic bate at 35°C for 1 hour (% on split weight.)

Scud: By hand.

Vegetable tannage: in a set of 12 suspender pits the first liquor is 10oBK and *p*H 5.0 and is raised in steps of 2-3o BK per pit finishing at 40°BK and *p*H 4.0.

The bottom 3 pits have rocker movement. The desired blend of extract is diluted with water to slightly over 40 degree barko meter and run into the top pit. If myrobalans alone is used, alkali must be added to the diluted liquor to reduce the natural acidity and so raise the *p*H from 3.2 – 4.0. The hides spend one day in each pit and as they are moved the liquors are run in the opposite direction.

Scour: The grain in drum, using warm sumac leaf in fusion at 33°C for 30 minutes. Wash off and Horse up.

Fatliquor: In drum using 0.25 kg sulphated codlever oil per hide at 35 degree Centgrade for 45 minutes.

Horse up to drain.

Dry: slowly over poles.

Finishing: Fashions in this type of leather range from the flexible to the very soft in the case of cushion, upholstery. In all cases it is essential that the finish should be rub-fast in colour, gloss or non-gloss and should be cleanable with a damp cloth. Originally, it was finished by application of a bottom sealing coat of polyacrylate dispension,dried and then spray finished with pigmented on tinted nitro-cellulose lacquers,usually plated or embossed. Unless carried out carefully, there is always the possibility of the film becoming brittle due to plasticiser migration or yellowing on exposure to sunlight. Polyurethane finishes have distinct advantages.

Component	No of Finish		
	1st	2nd	3rd
Pigment paste	50	150	-
Water	800	570	-
Polyacrylate dispension	100	250	-
Penetrator solvent	50	-	-
Wax emulsion	-	40	-
Urethane lacquer	-	-	200
Urethane thinners	-	-	600
Solvent dye solution	-	-	100
Urethane hardner	-	-	100
Dosage (g per sq ft)	20	10	20

Coat (1) is sprayed to give good wetting and anchorage to the leather. Coat(2) is sprayed to cover, dried and plated at 73°C and 150 kg per sq. cm. A second levelling spray coat(2) may be necessary. At this stage the leather may be boarded or preferably dry-drummed until the plated effect is lost and an attractive broken or natural grain is achieved. Finally, the urethane coat is applied as before.

Quality Control and Standards

The upholstery leather industry has done far more than any other segment of the leather industry in developing test method and specifications for the product. A major reason for these developments is the result of the relatively large percentage of the product sold to the automotive industry which buys on specification. The work of the upholstery industry has been done through the technical committee of the upholstery leather group working, very effectively, with the technical staff of the various auto motive companies and suppliers. Although all the leather sold to the automotive industry is sold on definite specifications, the upholstery leather industry has extended this principle into the furniture leather field. In a number of instances very extensive work has been carried out by the technical committee in attempting to set specifications and develop method that can be related realistically to service performance. Particular tests and specifications that have been done are resistance to fading, resistance to flex and resistance to cold. The following test methods are used as basis of specifications on upholstery leather:

1. Breaking strength
2. Elongation (stretch)
3. Stitch tear resistance-static
4. Stitch tear resistance-dynamic
5. Colour fastness – fadeometer
6. Colour fastness – south florida exposure
7. Abrasion resistance
8. Cold temperature resistance
9. Flex resistance
10. Resistance to blocking
11. Resistance to cracking
12. Resistance to bleeding
13. Resistance to sulfides
14. Resistance to perspiration

The common chemical requirements covered include moisture, fat, *p*H. The more subjective requirement of satisfactory upholstery leather such as colour, grain, embossing, depth, temper hand etc. are covered descriptively. Of course, all specifications include a statement of the requirements of thickness, area, type of finish etc.

Production Capacity

Quantity: 30,000 pcs of upholstery leather i.e. equivalent to 7,50,000 sq ft. (per annum).

Value: Rs. 3,60,00,000

Motive Power 75 kW.

Pollution Control

The pollution control measures are to be given utmost attention as the Affluents coming out of the process are very toxic and they are likely to affect the flora and fauna of water, if disposed off into the river. Moreover, effluents are also, likely to degrade the fertility of the soil. So proper effluent treatment plants are to be installed in the tannery to treat the effluent and make the treated water go out into river.

Energy Conservation

Energy is spent in the tannery in the form of electricity and fuel. Hence, there exists a lot of scope for conservation of electricity and fuel as a measure of energy conservation. The workers should be properly trained to operate the machines as and when required . They should be trained to yield maximum units during the machine operation and should not allow the machines to run by motive power unnecessarily. The electrical lines should be properly made and checked at regular intervals. In respect of fuel, proper attention is to be taken care of. The boiler should be properly maintained. Misuse of fuel in the form of wood, petrol, kerosene should be avoided.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building (per month)	(Rs.)
Land 1000 sq. meter	
Building (covered area) 500 sq. meter on rent per month	20,000

(ii) Machinery and Equipments

Sl. No.	Description	Qty.	Rate (Rs.)	Value (Rs.)
i.	Wooden paddle of vat size 8'x7' on 10 HP–1000 rpm A.C. motor, starter and V belt	2	50,000	1,00,000
ii.	Wooden drum 8'x6' with starter and motor 10 HP and starter	2	1,00,000	2,00,000
iii.	Fleshing machine 1800 mm with 15 HP motor and starter	1	2,50,000	2.50,000
iv.	Splitting machine 1800 mm with 15 HP motor and starter	1	5,00,000	5,00,000
v.	Unhairing machine 1800 mm with 15 HP motor and starter	1	4,00,000	4,00,000
vi.	Hydraulic press with 25 HP motor and starter	1	4,00,000	4,00,000
vii.	Spray booth with compressor	2	50,000	1,00,000
viii.	Measuring machine 1800 mm width with 5 HP motor	1	2,00,000	2,00,000
ix.	Generator set 50 kVA	1	2,00,000	2,00,000
x.	Working table, toggles etc.	LS	50,000	50,000
			Total	24,00,000
xi.	Testing equipments			60,000
xii.	Pollution Control Equipments (Effluent treatment plant)			3,00,000
xiii.	Cost of power connection including transformer			2,00,000

Sl. No.	Description	Qty.	Rate (Rs)	Value (Rs)
xiv.	Electrification and installation @ 10% of cost of machinery			2,40,000
xv.	Cost of office equipment including furniture			50,000
(iii)	Pre-operative expenses, project cost, non-refundable deposits			50,000
	Total Fixed Capital			33,00,000

B. Working Capital (per month)

(i) Personnel (per month)

Sl. No.	Designation	Nos.	Salary (Rs.)	Total (Rs.)
	Administrative and Supervisory			
1.	Tanner-cum-Manager	1	10,000	10,000
2.	Supervisor	1	5,000	5,000
3.	Clerk-cum-Accountant	1	4,000	4,000
4.	Watchman	1	2,000	2,000
5.	Sweeper	1	2,000	2,000
	Technical			
6.	Machine Operator	6	3,000	18,000
7.	Skilled Worker	6	3,000	18,000
8.	Unskilled workers	10	2,000	20,000
		Total		79,000
	Perquisites @ 20% of salaries			15,800
		Total		94,800
		Say		95,000

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

Sl. No.	Description	Qty.	Rate (Rs.)	Total (Rs.)
1.	Raw cow hides	2500 pcs of 62500 sq. ft.	700/ per pc.	17,50,000
2.	Processing and finishing chemicals	62500 sq. ft.	10 per sq. ft.	6,25,000
			Total	23,75,000

(iii) Utilities (per month)	(Rs.)
Power	20,000
Fuel Cost	5,000
Total	25,000

(iv) Other Contingent Expenses (per month) (Rs.)		
a)	Rent	20,000
b)	Postage and stationery	1,000
c)	Telephone	3,000
d)	Repair and maintenance	3,000
e)	Transportation expenses	4,000
f)	Advertisement and publicity	2,000
g)	Insurance	4,000
h)	Oil and lubricant	2,000
i)	Travelling and conveyance	3,000
j)	Sundry expenses	4,000
k)	Sales expenses	4,000
	Total	50,000

(v) Total Recurring Expenditure (per month) (Rs.)		
i)	Personnel (salaries)	95,000
ii)	Raw material	23,75,000
iii)	Utilities	25,000
iv)	Other contingent expenses	50,000
	Total	25,45,000

(vi) Total Working Capital (for 3 months)

25,45,000 x 3 = Rs. 76,35,000

C. Total Capital Investment

i)	Fixed Capital	Rs. 33, 00, 000
ii)	Working capital	Rs. 76, 35, 200
	Total	Rs. 1,09,35,200
	Say	Rs. 1,09,35,000

MACHINERY UTILISATION

Anticipated utilization of the machinery is about 75 to 80%. All machine operations are important. Hence, it is difficult to single out any particular machine operation to be bottleneck. However, machines like fleshing, splitting, unhairing , embossing occupy an important position in the manufacture of upholstery leather. Hence proper control and monitoring is required so that an even flow of production is assured. Moreover, the supervisory personnel should be effective enough to reduce the downtime of the machines, carry out regular maintenance of the machines and timely feeding of materials and instructions etc.

FINANCIAL ANALYSIS

(1) Cost of Production (per year)		(Rs.)
a)	Total recurring cost	3,05,40,000
b)	Depreciation on machinery and equipment@ 10%	3,00,000
c)	Depreciation on office equipment and furniture @ 20%	10,000
d)	Interest rate @ 15% on total investment	16,40,250
	Total	3,24,90,250
	Say	3,24,90,000

(2) Turnover (per annum)	(Rs.)
By sale of 7,50,000 sq.ft @ Rs. 48 per sq.ft.	3,60,00,000

(3) Net Profit (per year)

Rs. 3,60,00,000 – 3,24,90,000= Rs. 35,10,000

(4) Profitability Ratio

$$= \frac{\text{Net profit x 100}}{\text{Turnover}}$$

$$= \frac{3510000 \times 100}{3,60,00,000}$$

$$= 9.75\%$$

(5) Return on Investment

$$= \frac{\text{Net profit per year x 100}}{\text{Capital investment}}$$

$$= \frac{3510000 \times 100}{10935000}$$

$$= 32\ \%$$

(6) Break-even Point

Fixed Cost (per annum)		(Rs.)
a)	Rent	2,40,000
b)	Depreciation	3,10,000
c)	Interest on total investment	16,40,250
d)	40% of wages and salaries	4,56,000
e)	40% of other Contingent expenses and utilities, (excluding rent and insurance)	2,44,800
	Total	28,91,050

B.E.P.

$$= \frac{\text{Fixed cost x 100}}{\text{Fixed cost + Net profit}}$$

$$= \frac{2891050 \times 100}{2891050+3510000}$$

$$= 45.16\%$$

Addresses of Machinery and Equipment Suppliers

1. M/s. Siva Engg Co.
   Ambur, North Arcot Distt.
   Tamil Nadu.
2. M/s. Annapurna Enterprises
   F-10/2, HIDC, Shiroli,
   Kolhapur – 416122
3. M/s. Bengal Tanning Machinery Co. (Pvt.) Ltd.
   9-A, New Tangra Road,
   Kolkata – 46
4. M/s. Jugi Enterprises
   Ram Mansion,
   Pantheam Road,
   Chennai – 9
5. M/s. Shalimar Engg. Works
   12-B, Probhuram Sarkar Lane,
   Kolkata –15

6. M/s. Prototype Development and Training Centre
B/24, Guindy Estate,
Ekkaduthangal,
Chennai.

Addresses of Raw Material Suppliers

Leather: Wet salted cow hides are available locally.

Auxilliaries

1. M/s. Bayer (India) Ltd.
7, 49, Anna Salai,
Chennai - 2
2. M/s. Tamilnadu Chromates and Chemicals Ltd.
13, Nungambakkam High Road,
Chennai
3. M/s. Leather Chemicals and Industries Ltd.
A-1, New Alipur,
Kolkata
4. M/s. Balmer Laurie and Co.
10, Spur Rank Road,
Chetput,
Chennai
5. M/s. Kanpur Chemicals (Pvt) Ltd.
Anwarganj,
Kanpur (UP)
6. M/s. BASF India Ltd.
Tiecion House,
E. Moses Road,
Mumbai
7. M/s. Golden Chemicals (Pvt.) Ltd.
Vile Parle,
Mumbai – 56.
8. M/s. Allied Resin Cchemicalsl Ltd.
134/1, M.G.Road,
Kolkata
9. M/s. Swastic Chemicals Industries (Pvt.) Ltd.
Vile Parle,
Mumbai –56
10. M/s. Indogil Chemicals Industries, Ticoieon House,
Dr. E. Moses Road,
Mumbai.