

Shower Proof Garment Leather

PRODUCT CODE	: N.A.
QUALITY AND STANDARDS	: BIS Specification/Customer's Specification
PRODUCTION CAPACITY	: Qty. : 30000 pcs. of Cow Hides (per annum) Value: Rs. 4,12,50,000
MONTH AND YEAR OF PREPARATION	: February, 2003.
PREPARED BY	: Small Industries Service Institute 111-112, B.T. Road, Kolkata-700 035.

INTRODUCTION

The Shower Proof garment Leather is a special type of leather with some unique characteristics. The shower proof garment leather is mainly used in garment industry for making shower proof leather garments like coat, jacket, trousers etc. It is a type of leather which protects the garments from rain and snow shower. This can be made by processing cow hides or goat or sheep skins as per the demand. The present project profile envisages to produce the shower proof garment leathers by processing the cow hides. The garment leather should be very soft, defectless and shower proof should have a good run to withstand the stretch of the garment while in wear. The leather should have a good colour fastness property both dry and wet rub fastness. Such type of leather are in great demand in the export market.

MARKET POTENTIAL

There exists a huge market potential for this type of leathers, specially in the export market. This is because the leather garments made from the shower proof leather are in great demand both in the domestic export market. Marketing of the garment leathers would not be a problem, since there are a large no. of leather garment manufacturers in our country specially at Delhi, Chennai, Kolkata, Mumbai, Kanpur and some other places, where leathers for garments are consumed in bulk quantity for production of leather garments. In the year 2000-2001 leather garments were exported to the tune of Rs.2100 crores as against Rs.1500 crores during 1999-2000 which is about 39% more. Apart from the export market, there is also a good demand in our country specially for Northern Hilly and North Eastern area.

BASIS AND PRESUMPTIONS

- i) The unit would work on single shift basis for 25 days in a month i.e. 300 days in a year.
- ii) The time period for achieving the full capacity utilisation is three years – 60% in 1st year, 75% in 2nd year and 100% in 3rd year.
- iii) Labour rate: Labour rate is as per the rates existing in the locality.
- iv) Interest rate: 16.5% for fixed and working capital.
- v) Margin money: 25% of the total capital investment.
- vi) Pay back period: About 3½ years after the commencement of the commercial production run.

IMPLEMENTATION SCHEDULE

It is expected that the project would be implemented within a year. The tentative break-up of the implementation schedule is as follows:

Sl. No.	Activity	Period (in months)
1.	Selection of the product and site	1
2.	SSI registration and other formalities	1
3.	Project report preparation, vetting and getting loan from the financial Institution or Nationalised Banks etc.	2 to 3
4.	Recruitment of labour and trial	1 to 2

run before commencement of commercial production

TECHNICAL ASPECTS

Process of Manufacture

Soaking: Suitable quality of raw-cow hides is selected for manufacturing of the shower proof garment leathers for garments. The selected raw-cow hides are taken in the paddle. The hides are washed in the running water for about 2 hours to remove all the dirt. The soaking process is carried out as follows:

Water-250%

Detergent-0.2%

Preservative-0.5%

The paddle is run for about 3 to 4 hours till proper soak back of the raw-hides

Liming: The soaked hides are then limed as follows in the paddle:

Water 25%

Sodium Sulphide 5-6%

Lime 6-7%

The paddle is run for 2 hours continuously. Then the paddle is run intermittently for 10 to 15 minutes per hour. In this way the liming is carried out for about 24 hours. Then the pelts are checked as regards the completion of liming and are taken out of the paddle for fleshing. After fleshing of the pelts are over, the pelt weight is taken.

Deliming: The limed pelts after fleshing are taken into the drum and thoroughly washed in running water for about 2 hours. Then, Deliming is done as follows:

Water 25%

Ammonium chloride 1.5% to 2%

The delimiting is carried out for about one and a half hours. Then the Delimiting is checked with the phenolphthalein.

Pickling: The delimiting bath is drained out and the pickling is done as follows :

Water-75 to 80%: The drum is run for about 10 minutes.

Add: 1.5% sulphuric acid previously diluted in water (1:10) is added to the drum in three equal installments at an interval of 30 minutes. The pickling is carried out for 2 hours and is checked at a pH of 3.0.

Chrome tanning: The chrome tanning is carried out in the same bath as follows:

Add: Basic chrome sulphate : 7%

The drum is run for 10 hours. Then, the penetration of the chrome liquor into the pelt is checked. Then, basification is done with the sodium bicarbonate and boil test is carried out to check the completion of tanning.

The tanned hides in this stage are called wet blue. The wet blues are then sammed under the sun or in the samming machine. The shaving of the wet blue is done to proper thickness of around 0.8 to 0.9 mm in the shaving machine. The shaved wet blues are then taken into the drum to carry out the following processes.

Neutralisation: The neutralisation of the blues are carried out as follows:

Water : 200%

Sodi-bi-carb : 2% (On shaved weight)

Sodium formate : 0.5%

The drum is run for 6 minutes. The neutralisation is checked at pH around 6.0 and the wet blues are washing in running water for 15 minutes.

Retanning: It is done as follows :

Water : 250%

Basyntan OS : 2%

Basyntan DI : 3%

The drum is run for 60 minutes and the exhaustion of the bath is checked and washed in running water for 10 minutes.

Fat liquoring and dyeing: The fat liquoring and dyeing of the leathers is done as follows:

Water : 200%
(50C-60C°)

Sulphited vegetable oil : 8%

Densodium, EN : 1%

Synthetic oil : 7%

Raw oil : 1%

Water proofing agent : 0.5%

Preservative : 0.5%

Liquor Ammonia : 0.3%

The oil emulsion is added to the drum which is run for about one hour. Then the exhaustion of the fat is checked. Then 0.5% formic acid is added for fixing of the fat and the drum is run for 30 minutes.

Then add : Direct Dye – 1.0 to 1.5%
(As per the required shade).

The drum is run for 30 minutes and the dye is fixed with 0.5% formic acid and the drum is run for 30 minutes.

Add: Preservative : 0.5%

Drum is then run for another 20 minutes.

The materials are washed in running water for 10 minutes and then drained out and piled up in the horse overnight.

Next day, the crusts are sammed, set and dried. Then the crusts are conditioned with the saw dust, toggled and trimmed off. Then buffing and dusting off the crusts is done and sent for finishing.

Finishing: This is one of the most important operations in making the shower proof garment leather. The crusts are first of all snuffed on the grain surface with 420 emery paper on the buffing wheel. This is done to remove the defects on the grain surface and bring uniformity on the surface. The snuffed crusts are then dusted off to remove the loose from the crusts. The crusts dusts are remoulded from the crusts. The crusts are then sprayed with a soft impregnating resin binder in the spray booth and dried. The impregnated crusts are then embossed in the hydraulic press with a fine hair-cell plate. The fine hair-celled crusts are then padded with coloured season in the padding table twice and dried properly. The padding season is made with the following elements :

Lipton Pigment	: 100 parts.
Polyurethane binder and other binder	: 300 parts
Impregnator	: 10 parts.
Plasticiser and Wax	: 10 parts.
Lipton filter	: 20 parts.
Preservative	: 5 parts.
Water	: 1000 parts.

The padded shower proof garment leathers are then sprayed with the above season twice to ensure complete coverage. The sprayed leather are then dried properly.

Top coat: The sprayed leathers are then sprayed with water proofing agent and lacquered with a lacquer solution to

impart colour fastness and shower fastness after which it is dried .

The garment leathers are then plane plated in the hydraulic press under light pressure and low temperature. The garment leathers thus finished is measured in the measuring machine and then packed for despatch.

Quality Control and Standards

BIS specification to be followed or as per the customer's specification.

Production Capacity

- Quantity : 30000 pcs. of shower proof leather for leather garments.
Equivalent to
7,50,000 sq.ft.
(per annum)
- Value : Rs. 4,12,50,000

Motive Power 110 KW.

Pollution Control

As the project is envisaged to be set up in Industrial Estate for tanneries with Common Effluent Treatment Plant, separate pollution control plant is not considered in the project. However, a cost of about Rs. 10,000 will be incurred per month for maintenance of CETP.

Energy Conservation

There exists a lot of scope of energy conservation in the tannery, since a lot of energy is spent in the tannery in the form of electricity and fuel. As a measure of energy conservation, the workers should be properly trained to operate the machinery as and when required and maintain them in good condition and check wastage of energy.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building	(Rs.)
Land – 1200 sq.mtr. @ Rs.1000 per sq.mtr.	12,00,000
<i>Built-up Area</i>	
(i) Office, Store etc. 120 sq.mtr. @ Rs.4300 per sq.mtr.	5,16,000
(ii) Working shed 600 sq.mtr. @ Rs.3000	18,00,000
Total	35,16,000

(ii) Machinery and Equipments

Sl. No.	Description	Ind. Imp.	Qty. (Nos.)	Rate (Rs.)	Amount (Rs.)
1.	Wooden paddle of vat size 8"x7" one 10 HP 1000 RPM AC motor Starter and Vee Belt	Ind.	2	75000	1,50,000
2.	Wooden Drum 8"x8" with starter and motor 15HP and starter	Ind.	2	200000	4,00,000
3.	Shaving machines single width 7.5 HP motor and starter	Ind.	1	55000	55,000
4.	Slocomb staking machine with motor 7.5HP and starter	Ind.	1	55000	55,000
5.	Toggling machine with 20 boards of size 9"x5" suitable for hides	Ind.	1	200000	2,00,000
6.	Hydraulic Press with 25 HP motor and starter	Ind.	1	1200000	12,00,000
7.	Reversible setting M/c. 2400 mm Working width With 25 HP and Starter	Ind.	1	250000	2,50,000
8.	One spray booth of 9"x5" with top booth cover, 2 nos. of 18" exhaust fan and starter	Ind.	1	35000	35,000
9.	Fleshing machine (2400 mm) working width with 20HP motor/starter	Ind.	1	240000	2,40,000
10.	Tools and equipments L.S.				40,000
11.	Electrification and Installation @ 10% of the cost of machinery				2,58,500
12.	Office furniture, Workshop furnitures etc.				50,000
	Total				29,33,500

(iii) Pre-operative Expenses

Total fixed capital	Total (Rs.)
Land and Building	35,16,000
Machinery and equipments	29,33,500
Pre-operative expenses	15,000
Total	64,64,500

B. Working Capital (per month)**(i) Personnel (per month)**

Sl. No.	Designation	No.	Salary (Rs.)	Amount (Rs.)
A. Administrative and Supervisory				
1)	Manager-cum-Tanner	1	5000	5,000
2)	Supervisor	1	3000	3,000
3)	Clerk-cum-Accountant	1	2500	2,500
4)	Watchman	1	750	750
5)	Sweeper	1	750	750
	Total			12,000
B. Technical				
6)	Skilled Workers	14	2000	28,000
7)	Semi-skilled Worker	10	1500	15,000
8)	Un-skilled Worker	6	750	4,500
	Total			59,500
	<i>Add: Perquisites @ 20% of salaries</i>			11,900
	Total			71,400

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

Sl. No.	Description	Qty.	Rate (Rs.)	Total (Rs.)
1.	Raw-cow hides	2500 pcs. of 62500 sq.ft.	650 per pc.	16,25,000
2.	Processing and finishing chemicals	62500 sq.ft.	15 per sq.ft.	9,37,500
	Total			25,62,500

(iii) Utilities (per month) (Rs.)

Power	25,300
Water	5,000
Fuel	10,000
Pollution control charges	10,000
Total	50,300

(iv) Other Contingent Expenses (per month) (Rs.)

a) Postage and stationery	5,000
b) Transport charges	5,000
c) Telephone	5,000
d) Consumable stores	5,000
e) Repair and maintenance	5,000

Other Contingent Expenses (per month) (Rs.)

f) Advertisement and publicity	2,000
g) Taxes	2,000
h) Insurance	2,000
i) Sales expenses	10,000
j) Misc. expenses	15,000
Total	56,000

(v) Total Recurring Expenditure (per month) Rs.

i) Personnel	1,45,800
ii) Raw-materials	25,62,500
iii) Utilities	50,300
iv) Other Contingent Expenses	56,000
Total	28,14,600

(vi) Working Capital for 3 months Rs. 84,43,800**C. Total Capital Investment**

i) Fixed Capital	67,70,000
ii) Working Capital for 3 months	84,43,800
Total	1,52,13,800

FINANCIAL ANALYSIS**(1) Cost of Production (per annum) (Rs.)**

a) Total Recurring cost	3,37,75,200
b) Depreciation on Machinery and equipments @10%	3,00,350
c) Depreciation on building @ 5%	1,15,800
d) Depreciation on office furniture @ 20%	40,000
e) Interest on capital investment @ 16.5%	22,82,070
Total	3,65,13,420
Say	3,65,13,400

(2) Turnover (per annum) (Rs.)

Sale of 7,50,000 sq.ft. of shower proof garment leather (30000 x 25 sq.ft.) @ Rs.55 per sq.ft.	4,12,50,000
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**(3) Net profit (per year) Rs. 47,36,600
Turnover – Cost of Production**

(4) Profitability

$$= \frac{\text{Net profit per year} \times 100}{\text{Turnover}}$$

$$= 11.48\%$$

(5) Return on Investment (per month)

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

$$= \frac{47,36,600 \times 100}{1,52,13,800}$$

$$= 31.13\%$$

(6) Break-even Point

(i) Fixed Cost (per annum)	Amount (Rs.)
a) Depreciation on building, machinery, equipments and furniture	4,56,150
b) Interest on capital investment	22,82,070
c) 40% of salary and wages, utilities and other Contingent Expenses	12,00,480
d) Insurance	9,000
Total	39,47,700
(ii) Net Profit (per annum)	47,36,600

$$\text{B.E.P.} = \frac{\text{Fixed cost} \times 100}{\text{Fixed cost} + \text{Profit}}$$

$$= \frac{39,47,700 \times 100}{(39,47,700 + 47,36,600)}$$

$$= 45.45\%$$

Addresses of Machinery and Equipment Suppliers

1. M/s. Prototype Development and Training Centre
Sector – B/84,
Guindy Indl. 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 Indl. 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 and Chemical Suppliers

1. M/s. Asia Tannery,
Jajmau,
Kanpur (UP).
2. M/s. Zaz Tannery,
Jajmau,
Kanpur (UP).
3. M/s. Indofil Chemical Ltd.
Nirlon House,
Dr. Annie Besant Road,
Mumbai – 400 025.
4. M/s. Leather Chemical and Industries Ltd.
4-1, New Alipur,
Kolkata.
5. M/s. BASF Chemicals (Pvt.) Ltd.
Anwarganj, Kanpur (UP).
6. M/s. Allied Resing Chemicals Ltd.
134/1, MG Road,
Kolkata-11.
7. M/s. Clariant (India) Ltd.
Kolkata – 700 046.
8. M/s. Balmer Laurie and Co.
Kolkata – 700 001.