Leather Processing & Tanning Technology Handbook
<table>
<thead>
<tr>
<th>Code:</th>
<th>ENI143</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format:</td>
<td>Paperback</td>
</tr>
<tr>
<td>Indian Price:</td>
<td>1400</td>
</tr>
<tr>
<td>US Price:</td>
<td>150</td>
</tr>
<tr>
<td>Pages:</td>
<td>592</td>
</tr>
<tr>
<td>ISBN:</td>
<td>9788190568593</td>
</tr>
<tr>
<td>Publisher:</td>
<td>NIIR PROJECT CONSULTANCY SERVICES</td>
</tr>
</tbody>
</table>
Leather Industry has been one of the traditional industries operating at present. The hides and skins of animals are the source of leather and preserving hides and tanning them into leather has become an important industry. Leather-making is now a scientifically based industry, but still retains some of the charm and mystery of the original craft. Animal skin that has been processed to retain its flexibility, toughness, and waterproof nature is known as leather. "Leather tanning" is a general term for the numerous processing steps involved in converting animal hides or skins into finished leather.

Tanning is the final process in turning hides and skins into leather. Tanning involves a complex combination of mechanical and chemical processes. The heart of the process is the tanning operation itself in which organic or inorganic materials become chemically bound to the protein structure of the hide and preserve it from deterioration. The main chemical processes carried out by the tanner are the unhairing, liming, tanning, neutralizing and dyeing.

This indispensable handbook provides a detailed insight into the leather industry, leather processing and tanning technology with manufacturing of different forms of leather products. The book contains the manufacturing process of different forms and type of leather products like box and willow sides, glazed kid, sole leather, lace leather, belting and bag leather, chamois leather, upholstery leather, antique leather, light and fancy leather, etc. to name a few. This book will be very helpful to its readers, upcoming entrepreneurs, scientists, existing industries, technical institutions, technocrats, etc.

Content:
1. FROM CRAFT TO INDUSTRY
2. WHAT LEATHER IS AND HOW IT IS MADE
   Early Methods of Preparing Leather
   The Sources of Hides and Skins
   The Nature of Hides and Skins
   Preparation for Tanning
   Tanning
   Dressing and Finishing
   Colouring
3. THE BOOMING LEATHER INDUSTRY
   Market
   Leather Footwear Industry
4. LEATHER: PUTTING BEST FOOT FORWARD
   Major Importing Countries of Indian Leather and
   Leather Products
5. INDIAN LEATHER INDUSTRY SHINING BRIGHT
   Tanning Industry
   Leather Product Industries
   Role of Training Institutions
6. CLARI PROCESSOR
   Innovation through Engineering
   Conventional Wooden Drum
   Practical Wise Limitation
   CLaRI Processor
7. HIDES AND SKINS
   Kips
   Slaughtered and Fallen (Dead) Hides
   Flaying
8. CURING AND PRESERVATION OF HIDES AND SKINS
   Wet Salting
   Dry salting or Plaster Curing
   Curing by Drying
   Common Defects of Hides
   Common Defects of Goat Skins
   Defects of Sheep Skins
9. OPERATIONS PRELIMINARY TO TANNING
   Soaking
   Liming
   Deliming
   Pickling
   Tanning
10. FINISHING OF LEATHER
    Finishing of Vegetable tanned Leather
    Finishing of Chrome Leather
11. MANUFACTURE OF BOX AND WILLOW SIDES BY THE SINGLE BATH PROCESS OF CHROME
TANNING
Raw Hides
Green Fleshing
Soaking
Liming
Bating
Pickling
Tanning
A Combined Double and Single Bath Tannage Using Farina Liquor
Shaving
Sorting for Dyeing
Neutralization
Dyeing
Method of Making Different Types of Fat liquor
Striking Out
Setting
Drying
Damping in Sawdust
Staking
Nailing on Board
Pigmenting, Seasoning and Glazing
Boarding or Graining
Manufacture of a Cheap Class of Box and Willow Sides Known as China Chrome in Calcutta
Manufacture of Embossed Chrome Leather for Ammunition Boot Uppers
Chrome Retanned Leather for Army Boots
12. MANUFACTURE OF GLAZED KID
Raw Material
Soaking
Pasting for Unhairing
Liming
Deliming
Puering or Bating
Scudding
Pickling
Tanning
Neutralizing
Dyeing and Fat liquoring
Setting and Drying
Damping for Staking
Staking
Nailing the Skins
Buffing
Restaking
Clearing
Seasoning
Glazing
Ironing
Measuring
Grading and Bundling

13. MANUFACTURE OF CHROME SOLE LEATHER
Raw Materials
Soaking
Unhairing and Liming
Deliming
Pickling
Tanning
Neutralizing
Fat liquoring or Oiling
Process of Making Chrome Sole White
Waxed or Stuffed Chrome Sole Leather

14. MANUFACTURE OF CHROME PICKING BAND AND LACE LEATHER
Raw Material
Soaking
Rounding
Unhairing and Liming
Deliming
Pickling
Tanning
Samming and Shaving
Neutralizing
Fat liquoring and Stuffing
Setting, Drying and Cutting into Straps
Colouring Picking Band
Hairy Bands
Further Processes for Picking Band Leather
Chrome Tanning of Lace Leather
Chrome Belting Leather

15. MANUFACTURE OF VEGETABLE TANNED SOLE LEATHER
Raw Material
Soaking
Liming
Rounding
Deliming
Tanning
Pit Tanning Process
Liquor Process of Pit Tannage
Leaching and Leach Pits
Carrying Out the Process of Liquor Tannage
Drum Tannage of Sole Leather
Finishing of the Usual Pit Tanned Sole Leather
Bag Tannage of Sole Leather
Deliming
Tanning

16. MANUFACTURE OF HARNESS, SADDLERY, BELTING AND BAG LEATHER

Raw Material
Soaking
Liming
Deliming
Tanning
Yield
Currying
Rolling
Glassing
Tallowing in
Finishing
Currying and Finishing of Strap Butts
Finishing Black Harness from Crust Condition
Belting Leather
Drum Stuffing Belting Butts
Leather for Bags, Trunks, Suit cases, etc
Tanning
Finishing

17. MANUFACTURE OF CHAMOIS LEATHER

Theories to Explain Chamoising
Tanning or Chamoising
Oiling and Stocking
Degreasing
Bleaching
Dyeing
Staining
Finishing
Water proofing
Combination Formaldehyde and Oil tannage of Chamois Leather

18. MANUFACTURE OF JAPANNED AND ENAMELLED LEATHER

Preparation of Leather for Japanning
Preparation of Japan
Villon's Formula of Japan
Davis Recipe
Use of Nitro cellulose in Patent Leather
Manufacture of Chrome Patent Leather
Rough Patent or Varnished Leather Manufactured in Calcutta
Manufacture of Chrome Patent Leather with Various Metallic Lustres
Abu Varnish
Alternative Methods
Abu Varnish (Alternative Method)

19. MANUFACTURE OF UPHOLSTERY LEATHER

Morocco Leather for Upholstery Work:
Manufacture of Upholstery Hides
Upholstery Leather Prepared with Kepolac Coloured Lacquers
Leather for Furniture, Carriage and Automobile Upholstery

20. MANUFACTURE OF ANTIQUE LEATHER
Chrome Tanned Antique Leather

21. MANUFACTURE OF LIGHT AND FANCY LEATHERS
Leathers from Calf Skins
Velvet or Suede Calf
Leathers from Goat Skins
Leather from Sheep Skins
General Method of Treating Sheep Skins
Suede Leather from Chrome Tanned Sheep and Goat Skins

22. MANUFACTURE OF HALF TANNED LEATHER FOR EXPORT
Different Barks Used in Tannage
Methods followed in Madras for the Manufacture of Half tanned or Crust Leather for Export

23. TANNING OF REPTILE SKINS BY THE VEGETABLE PROCESS
Sizes of Lizard Skins
Dyeing and Finishing of Lizard Skins
Other Reptile Skins
Bleaching of Reptile Skins
A German Process of Vegetable Tanning Reptile Skins

24. ALUM TANNING
Typical Recipes
Tawing and Ageing
Calf Kid
Clove Kid
Dressing of Wool Rugs and Skins with Hair on

25. FORMALDEHYDE TANNING

26. WATER PIGMENT FINISHES FOR LEATHER
Materials in Composition of Pigment Finishes
A Few Recipes of Pigment Finishes
Black
Medium Brown
Ox Blood
White
Names of Some Pigment Finishes on Market
Application of Pigment Finishes
Directions for Using Eukesol Dyes
Carpenol Pigment Finishes
Finishing of Box and Willow Sides, i.e.,
Full Chrome Kip Sides
Finishing of Fully Chromed Coloured Calf Skins
Finishing of Fully Chromed Black Box Calf
Sample Chapter:
The Booming Leather Industry

Leather enriches our lives in numerous pleasant ways. The belts and shoes that we wear and the wallets and purses that we carry are made of leather. In the developed countries, almost all of which are located in the frigid North, leather jackets, trousers and suits have long become a status symbol and so are the leather upholstered furniture and lavish interiors available only in top-of-the-line luxury cars. Leather has long outgrown its practical purposes and today is regarded more as a luxury than a necessity, particularly in the affluent West. This transformation has been made possible primarily due to the induction of state-of-the-art treatment and tanning technologies to give leather a never-before-possible thickness, unlimited colour variations, luxurious feel and silky touch. This has also turned leather into as comfortable a material to work with as any other fabric for any or all of the uses mentioned above.

Indian leather industry occupies a place of prominence in Indian economy. The sector has massive potential for growth since India leads in the availability of raw materials and also the use of leather is gaining prominence in many sectors and its vast potential for exports. The availability of cheap labour is another factor which is in its favour.

Leather industry also occupies a place of prominence in view of its massive potential for employment, growth and exports. There has been increasing emphasis on its planned development, aimed at optimum utilisation of available raw materials for maximising the returns, particularly from exports. Leather technology in recent times is fast emerging as a lucrative career option. Until a few years ago, those who happened to be in the industry were there through experience rather than through any formal training. But now, in India, scores of institutes are offering certificate as well as diploma courses in designing as well as production, adding a much needed professionalism to this industry.

MARKET

The Indian leather industry is growing by leaps and bounds. One must be wondering why is India exporting so much of leather to western countries. Apparently because leatherwear still enjoys a great demand abroad and of late even the domestic market is developing and consuming the offerings of this industry. To many, it would also be a surprise to know that the Indian leather industry is the fourth largest export earner in the country. One can only imagine what shape this industry will take on further maturing.

There has been increasing emphasis on the planned development of the leather and footwear industry aimed at optimum utilization of available raw materials for maximizing the returns, particularly from exports. The exports of leather and leather products gained momentum during the past decades. The exports from leather sector constitute 7% in country’s export basket. With the scientific advancement in footwear technology and modernization of techniques, this industry now requires managerial and supervisory staff and designers, all of a high caliber to optimize and upgrade our productions to meet international standards. There is an ever-increasing demand for these trained personnel.

LEATHER FOOTWEAR INDUSTRY

The footwear industry is a significant segment of the leather industry in India. India ranks second among the footwear producing countries next to China. The industry is labour intensive and is concentrated in the small and cottage industry sectors. While leather shoes and uppers are concentrated in large scale units, the sandals and chappals are produced in the household and cottage sector.

India produces more of gents’ footwear while the world’s major production is in ladies footwear. In the case of chappals and sandals, use of non-leather material is prevalent in the domestic market. The major production centers in India are Chennai, Ranipet, Ambur in Tamil Nadu. Mumbai in Maharashtra, Kanpur in U.P., Jalandhar in Punjab, Agra and Delhi.

Shoes manufactured in India with various brand names play a lead role in the global trade. The Indian
leather industry is focusing on key deliverables of innovative design, consistently superior quality and unfailing delivery schedules. India in itself has a huge domestic market, which is largely untapped. The Indian footwear industry is provided with institutional infrastructure support through premier institutions like Central Leather Research Institute, Chennai, Footwear Design & Development Institute, Noida, National Institute of Fashion Technology, New Delhi, etc. in the areas of technological development, design and product development and human resource development.

Name of Institute

Council for Leather Exports (CLE)
Leather Centre, 53 Raja Muthiah Road Periamet, Chennai- 600 003 Email: cle@giasm01.vsnl.net.in

Footwear Design & Development Institute (FDDI)
A-10/A, Sector-24 Noida-201 301
Email: fddi@del2.vsnl.net.in

Central Footwear Training Institute (CFTI)
Agra: 41-42 Industrial Area, Site C, Sikandra Agra - 282002 (U.P) E-mail cftiagra@usa.net
Chennai: 65/1 GST Road, Guindy, Chennai-600032
Email: cfti@md5.vsnl.net.in

Indian foot wear Industry has to go miles to achieve its objective of making Indian footwear number one in the world. But certain steps if taken can naturally increase its pace of development. The availability of abundant raw material base, large domestic market and the opportunity to cater to world markets makes India an attractive destination for technology and investments.

NIIR Project Consultancy Services (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Pre-feasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry. NPCS also publishes varies technology books, directory, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureau, consultants and consultancy firms as one of the input in their research.

NIIR PROJECT CONSULTANCY SERVICES
106-E, Kamla Nagar, New Delhi-110007, India.
Tel: 91-11-23843955, 23845654, 23845886, +918800733955
Mobile: +91-9811043595
Email: npcs.ei@gmail.com, info@entrepreneurindia.co
Website: www.entrepreneurIndia.co