



E-Newsletter



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This issue

- AFCAMMI : A Co-organizer of Ambur Open-3 P.1
- Recovered Water for Leather Processing P.2
- Assessment of Occupational Safety and Health aspects in Tanneries P.2
- Private Standards in the Leather Industry - Relevance P.3
- Noise in Tanneries P.4

From the Director's Desk

The Indian Leather Industry Foundation (ILIFO) has always been pro-active in improving the productivity of the leather industry. Initially, the focus was on introducing cleaner technologies to effect process economies and reduce industrial pollution.

Of late, ILIFO's activities cover a much wider area including safety, energy management and productivity improvement.

Over the last two years, there has been a fruitful interaction of ILIFO as BDS Provider with the Entrepreneurship Development Institute of India (EDI), Ahmedabad, in the development of the Chennai Leather Cluster. Support for this program had come from DFID, GTZ, IBRD and SIDBI.



In this collaborative venture, equipment for an energy audit cell in the PTIETC was selected by ILIFO and personnel trained. Members of the cluster and the CETP can avail the equipment and ILIFO-trained personnel to conduct energy audits in their tanneries.

Some measure of success has been achieved by upgrading a conventional drum in a selected tannery to reduce the energy consumption per kg in wet processes. Further work is in progress to make more improvements and quantify the data for dissemination throughout the cluster.

The present newsletter is brought out in collaboration with EDI, Ahmedabad. Content will include news of importance to the leather industry, news from members, changes in regulations and incentives. In addition, there will be feature articles on improving their facilities in various aspects such as plant layout, improvement of materials handling methods, introduction of cleaner technologies, adoption of renewable energy and others.

This ILIFO-EDI e-newsletter would be published quarterly.

We welcome contributions from institutions and members of the industry on any topic of relevance to the industry.

A. Sahasranaman IAS (Retd.)

Honorary Director

Indian Leather Industry Foundation

AFCAMMI A co-organizer of Ambur Open-3

Association of Footwear Components, Accessories and Machinery Manufacturers of India (AFCAMMI) is a trade association formed with the support of EDI's



Inauguration of Ambur Open 3

BDS Market Development Project. AFCAMMI was the co-organizer of Ambur Open 3, the Exhibition of finished leather, accessories, components, technology and machinery on 6, 7 June 2012 in Ambur Trade Centre, Ambur, organized by Indian Shoe Federation.



Ambur Trade Centre, Ambur



Recovered Water for Leather Processing

The commissioning of ZLD systems in CETPs results in recovery of process water from effluent and the process water is sent back to the tanneries through overhead tanks and pipelines. As the characteristics of recovered water are different from the usual process water being used in tanneries, there is a necessity to fine tune the processes.

There is a perception that the use of recovered water could save some amount of chemicals. Ranitec CETP came forward to disseminate the information to the tanneries on how to fine tune the processes to its member tanneries. Accordingly ILIFO conducted trails in lab scale as well as commercial



Interactive session in Ranitec CETP on use of recovered water

bulk level in three tanneries that follow Different type of processes, namely raw to wetblue, wetblue to finish and raw to vegetable tanned leather.

The results were disseminated to the all tanneries in and around Ranipet in an interactive session organized by Ranitec and SITDA on 14 November 2011 - **M.Viswanathan**.

The use of recovered water saves some amount of chemicals mainly in post tanning and also savings comes from avoiding purchased water.

It is estimated the chemical savings will amount to about Rs.3235 in processing one tonne of raw material from raw to finish.



Fine tuning is necessary in processing while using recovered water

Assessment of Occupational Safety and Health aspects in tanneries

Indian Leather Industry Foundation (ILIFO) has conducted a large scale assessment of occupational safety and health aspects in 125 tanneries and 2 CETPs of Vanitec Ltd in Vaniyambadi. Each tannery was assessed in all departments, processing sheds, machines, drums, service equipment, pre-treatment units for safety aspects.

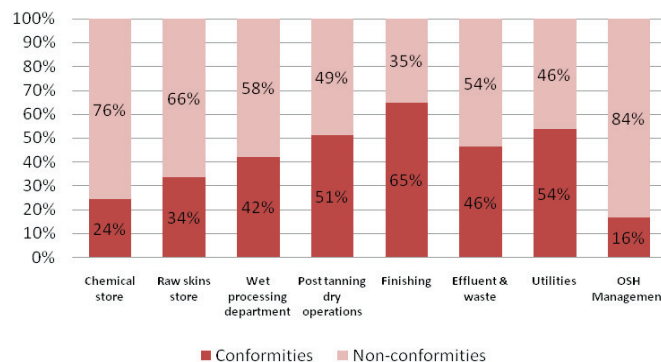
Each tannery was guided on safe work conditions and practices. A separate report was prepared for each tannery and presented incorporating the safety aspects already in place, improvements to be made to meet the minimum safety standards, specifications and details for such improvements and cost estimation.

The unsafe ways of storage and handling of chemicals, absence of: machine safety guards - active and passive, deficiencies in electrical safety

viz., absence of cable glands at terminal boxes of motors, conduits for electrical cables, fan and fan covers for motors, non-use of (appropriate)

assessed in each tannery and improvement measures suggested.

During the assessment, representatives in each tannery were also trained in safe work practices in tanneries. In all the tanneries and the CETPs, 167 personnel were trained. About 39,298 aspects were assessed in all these tanneries. Improvement measures for about 22,156 aspects were suggested. About 2000 motors in various machines in all these tanneries were verified during the assessment. It was estimated that an amount of Rs. 633.45 lakhs is required to improve the situation currently in all tanneries. The following chart shows the level of average conformities in different areas of operations.



personal protective equipment, unfavourable workplace environmental conditions, viz., inadequate or no dust extraction systems, poor ventilation and lighting, lack of mechanization in material handling and more importantly lack of awareness are some of the causes of the hazardous conditions that prevail in many tanneries. These issues were

Recently, ILIFO has been engaged by the CETP in Dindigul for assessment of occupational safety and health aspects in the CETP and all the member tanneries - **M.Viswanathan**.

Private Standards in the Leather Industry - Relevance

Manufacturers are primarily aware of product standards such as dimensional and performance standards specified by buyers. Additionally, foreign buyers typically ask whether the supplier complies with one or more of the popular Private Standards, which they insist on from exporters.

Some manufacturing companies have been complying with some of these and obtaining accreditation as complying from these private companies, who issue certificates that the subject company has been inspected and found to comply with the relevant private standard

Private Standards is not as widely known as mandatory norms such as the Factories Act and Pollution norms in the country, especially among the MSME (micro, small and medium enterprises) companies. It is imperative that these companies comply with private standards, for the simple reason that they are part of the supply chain. It was considered imperative to address these MSME companies.

Private Standards were devised by companies considering the opportunity that exists for independent organizations to ensure to consumers that suppliers of goods complied with certain standards. These include mandatory norms relating to harmful substances and environmental norms; engagement of minors in factories; social and safety standards; ethical business practices; etc.

Increasingly and over the years, many points addressed in some of these standards have been included in governmental standards. However, private standards remain important as a selling tool, addressing aspects strictly and reliably, to the satisfaction of consumers. As such, the certificates issued by these Private Standards companies are respected, and aids the marketing of a company's products.

Many of the standards have become widely accepted and labels are asked for by consumers before purchasing a product.

Since buyers seek companies that are certified as complying with some of these standards, it is desirable for exporters to comply with these additional buyers specifications.

Dissemination of such information widely is a key to ensuring a greater presence in the marketplace. The UNIDO-IFLMEA (Indian Footwear and Leather Manufacturers Association) invitation to ILIFO to make a presentation on Private Standards at CLRI (Central Leather Research Institute) on the 19th April 2012, provided an opportunity for the same.

UNIDO had requested ILIFO to conduct Research into the use of Private Standards among a typical cross-section of leather and leather product companies in India and determine their compliance.

ILIFO's research in 2009 into Private Standards, on the leather industry in India was compiled into a document together with data from other countries for the timber processing industry in Brazil and the textile industry in Brazil.

The video presentation of this research available at the UNIDO website was presented together with a PowerPoint presentation by Mathew Alexander, Vice president, ILIFO.

The various standards by type are - **Mandatory Norms, Eco Labels, Occupational Health & Safety Norms, Corporate Social Responsibility and Ethical Standards, Environment Management, Quality Management, Enterprise Resource Management.** There is some degree of overlap among standards of the various nations and Private Standards.

Describing the various standards, it was made clear to the industry how they would stand to benefit from implementation of private standards.

In many cases, consumers have great trust in some of these private standards, implemented by these companies, which are multinationals in their outlook and operations.

Initially they came into being in the absence or lack of comprehensive governmental norms, and driven by consumers.

Examples of mandatory norms are. Variants of these exist in every country, seeking to minimize the impact of manufacturing operations on the environment; and to ensure safety in organizations, besides providing protection from harmful substances to consumers - **Mathew Alexander**



Mr. Hemant Verma UNIDO, inaugurating the workshop; Invited included Mr. Shafeeq Ahmed, Chairman, IFLMEA; Mr. Saalai Maran, Executive Director, CLE; Mr. Vijayan, MD, IFLMEA



Video presentation on Private Standards at UNIDO, Vienna by Mr. Mathew Alexander, Vice President, ILIFO

Private Standards (Contd...)

Major Typical Industry Norms

Mandatory Norms

- Indian Pollution Control Board Norms
- Factories Act
- REACH (Registration, Evaluation, Authorisation and Restriction of Chemical substances)

Eco Labels

- EU Ecolabel for footwear (greener products)
- ECO-TOX LABEL for leather
- Schadstoffgeprüft (Tested for harmful substances)
- Cooperation for Avoiding Toxic substances in Shoes (CATS)
- Test Mark for Leather (LGR)
- GREEN DOT (contributes financially towards recycling packaging materials)
- Stichting Milieukeur (Netherlands)
- PFI Tested for harmful substances
- GORETEX Waterproof shoe construction
- Oeko-Tex® certificate

Occupational Health & Safety

- OHSAS 18001 Occupational Health & Safety

Social responsibility and Ethical Standards

- SA 8000, Social Accountability International (SAI)
- UN Global Compact
- AVE Code of Conduct based on ILO labour standards
- ETI (Ethical Trading Initiative)
- BSCI (Business Social Compliance Initiative)
- SEDEX (Supplier Ethical Data Exchange)
- ISO 26000 Guidelines to embed social responsibility for business.

Environment Management

- ISO 14001

Quality Management

- ISO 9000 (9000 series)
- Six Sigma
- Total Quality Management (TQM)
- Total Productive Maintenance (TPM)
- Failure Modes and Effects Analysis (FMEA)
- 5S
- Kaizen

Enterprise Resource Management

- SAP
- Enterprise Resource Planning (ERP)
- Material Requirements Planning (MRP)
- Electronic Data Interchange (EDI)
- Network & Information Security (NISSG)
- Document Management (DM)
- Radio Frequency Identification (RFID)

Energy Management

- ISO 50001

Noise in Tanneries

It is well documented that exposure to high levels of noise affects hearing, causes fatigue, distracts the worker and is detrimental to the performance of work, resulting in reduced productivity. As a general rule, noise levels exceeding 80 dBA during an 8-hour shift and impulsive noise above 130 dBA need to be avoided.

Exposure to high levels of noise can lead to: Hearing loss, Tinnitus

(ringing in the ear), Stress, Anxiety, High blood pressure, Gastrointestinal problems and Chronic fatigue.

Worldwide, an upper limit of 85 dBA for 8-hour exposure is specified. **It is important to note that every 3 dBA increase means a 100% increase in sound pressure level.** Hence NIOSH recommends halving of exposure time for every 3dBA in excess, i.e. exposure time at 88 dBA must be only 4-hours.

In measurements taken in Indian tanneries, noisy operations are the following.

1. Wet Drum Processing
2. Setting Machines
3. Vibratory Staking Machines
4. Generating Sets



Local Tanning/Dyeing Drum

S. No.	Operation / Machine	Noise Level (dBA)	Type	
1	Wet drum	97...100	Continuous	
2	Setting Machine (Indian)	80...98	Intermittent	
3	Setting Machine (foreign make)	80...88	Intermittent	Newer Machines are less noisy
4	Vibratory Staking Machine	78...101	Continuous	Newer Machines are less noisy
5	Diesel generator	>95	Continuous	Without noise-attenuating enclosure



DG Set without enclosure

Vibratory Staking machines

Staking in modern vibratory staking machines is also noisy, but not easy to eliminate at source. The best solution in this case is to have the machine in a separate area with the operator and assistants provided with ear muffs.



Vibratory Staking machine

Setting machines

The very action of spreading the leather in this machine by rotating blunt helical blades of the cylinder is noisy.

In machines made locally, the blades of the setting cylinder have near rectangular profile blade end, which causes more rubbing than spreading. The result is an even higher level of noise, poor setting action, and inefficient use of energy.

In new imported machines, the setting blades have a rounded edge of smaller radius which results in excellent setting, with greatly reduced noise; they also incorporate features such as absorbing materials and baffles which restrict noise emission.

However, tanneries must replace setting blades, when worn beyond a limit reduce setting effectiveness, increase noise emission and increase energy consumption.

Wet Processing Drum s

In this case, the main causes of the noise is

- ◆ Misalignment of the ring gear relative to center of rotation of the drum and
- ◆ Cast teeth of the ring gear and pinion, both not machine-cut to the correct profile

Most tanneries have not upgraded the design of their drum drives for over 40 years. This is not only resulting in excessive noise but considerable loss of energy.

In this context, it may be appropriate to mention that imported drums with machine-cut profiled teeth and well designed drives are very much quieter.

Some tanneries have attempted to reduce the noise by fitting non-metallic pinions (of Teflon or Nylon). Gear tooth loads on the pinion are higher than on the gear and this results in short life of the pinion, whose teeth break after a while.

Non-metallic pinion teeth have inherently lower strength than that those of cast iron of steel. Hence properly machined gear and pinion teeth are the better solution in the longer term.

Diesel generating sets

With the power situation and frequent power outages, it is necessary to run generating sets.

Current norms of the CPCB mandate noise-attenuating enclosures for DG sets which limit noise to within 75 dBA at 1-meter. These apply to new DG sets.

However, many tanneries with old generating sets, continue to use them without enclosures, exposing personnel to high levels of noise. Some have provided workers with ear muffs.

ILIFO has sensitized tanneries with Safety Audits covering all aspects of safety including noise and remediation measures for the same. Actions taken include isolating the operation and introducing barriers to reduce the propagation of noise; and the use of **appropriate** Personal Protective Equipment - **Mathew Alexander**.



Setting Machine (imported)

IN THE NEXT ISSUE

- Social aspects in Leather and Footwear Clusters
- Relevance of Total Organic Carbon Analysis
- Hazards of Tannery Dust and Controls
- New Energy Management Standard ISO:50000

**INDIAN LEATHER INDUSTRY
FOUNDATION (ILIFO)**

F2, "SHREYAS" No.87, Greenways Lane
Off Greenways Road, R.A.Puram
Chennai - 600 028. INDIA.

P +91-44-2461 5497
F +91-44-2461 5494
E ilifo@vsnl.com
W www.ilifo.org



**ENTERPRENEURSHIP DEVELOPMENT
INSTITUTE OF INDIA (EDII)**

P.O. Bhat - 382 428
Dist. Gandhi Nagar
Gujarat, INDIA.

P +91-79-2396 9161 / 2396 9158
F +91-79-2396 9164
E dmparikh@ediindia.org
W www.ediindia.org

