सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME-TECHNOLOGY DEVELOPMENT CENTRE-CHENNAI

Footwear Chronicle

A QUARTERLY JOURNAL

JANUARY - MARCH 2016

a member of SATRA TECHNOLOGY CENTRE

CFTI - A pioneer Training Institute in Footwear Technology

MODERNISED CFTI

Glimpses of 19th UITIC International Technical Footwear Congress held on 3rd & 4th February at ITC Hotel, Chennai

CFTI, Chennai Participated in Designers Fair 2016 at Le Royal Meredien on 31st Jan 2016

Display of Products Designed by CFTI, Chennai

CFTI, Chennai was one of the Participants in India International Leather Fair 2016, held on 31st Jan to 2nd Feb 2016 at Chennai Trade Centre, Chennai

सुरेन्द्र नाथ त्रिपाठी, भा.प्र.से.
अपर सचित एवं विकास आयुक्त (सू.ल. और म.उ.)
Surendra Nath Tripathi, IAS
Additional Secretary & Development Commissioner (MSME)

सत्यमेव जयते

सूक्ष्म, लघु एवं मध्यम उद्यम
भारत सरकार
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
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MINISTRY OF
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FOREWORD

I am happy to learn that CFTI, Chennai is bringing out a quarterly magazine named "Footwear Chronicle" to portray their activities. I hereby place my appreciation for the innovative approach of the Institute.

CFTI, Chennai is one of the Premier Training Institutes in the field of Footwear sector and is one of the leading training partners of Leather Sector Skill Council. The Institute is successfully conducting "Pradhan Mantri Kaushal Vikas Yojana" (PMKVY) and is also rendering technical / consultancy services to Footwear & allied industries. I am also happy to learn that CFTI, Chennai has conducted training for 2000 candidates in the job roles of stitchers, cutters, pasting, attachers, folders, skiver, splitters and table helpers and also extremely happy to learn that the Institute has achieved a remarkable feat by arranging placements for 1887 candidates out of 2000, thus achieving a phenomenal 94.35% of placements.

I hope the magazine will go a long way to portray the developmental activities of the Institute and would bridge the gap for more public participation.

I wish CFTI, Chennai all the success.

(Surendra Nath Tripathi)

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INTERNATIONAL FOOTWEAR AND LEATHER EVENTS

International Footwear and Leather Fairs being held around the world in the coming months:

Indo Leather & Footwear
Jakarta, Indonesia
12-14 May 2016
www.indoleatherfootwear.com

ANPIC
Loon, Mexico
25-27 May 2016
www.lafeiradeamerica.com

AYSAF
Istanbul, Turkey
25-27 May 2016
www.cnraysaf.com

International Footwear Expo
Shanghai, China
27-29 May 2016
http://en/llse.com.cn

Shoes & Leather
Guangzhou, China
1-3 June 2016
www.toprepute.com.hk

International Shoe & Leather Exhibition
HO Chi Minh City, Vietnam
13-15 July 2016
www.shoeleather-vietnam.com

OutDoor Show Europe
Friedrichshafen, Germany
13-16 July 2016
www.outdoor-show.com

International Leather, Shoe Materials & Shoe Machinery Fair
Wenzhou, China
26-28 Aug 2016
www.donnor.com

All China Leather Exhibition
Shanghai, China
31 Aug - 2 Sep 2016
www.aclechina.com

China International Footwear Fair
Shanghai, China
31 Aug - 2 Sep 2016
www.aplf.com

The NE Materials Show
Danvers, USA
7-8 Sep 2016
www.americanevents.com

SoCal
Los Angeles, USA
13-14 Jul 2016
www.americanevents.com

GDS
Dusseldorf, Germony
26-28 July 2016
www.gds-online.com

Director Speaks

Shri. K. MURALI
Director, CFTI

I am pleased to welcome you all to our website www.cftichennai.in. This Institute is well known for it's various skill training programmes and consultancy services offered in the field of Footwear and Allied subjects.

CFTI, Chennai has all the required infrastructure, including highly qualified faculty members and well-equipped workshops and laboratories, for hands on experience. Students are exposed to the most modern and up-to-date curriculum and contemporary developments in various disciplines of footwear technology.

Continuing education and training is a life long learning process which meets the variety of needs of Industry and includes skill training or upgrading of skills and knowledge through competence based education. Resources available in the form of buildings, laboratories, machinery , equipments , capability of faculty members, etc. can be put to use not only for our own students but also for industries, other professionals, other stake holders and for overall to the general public.

Industries are constantly changing and hence continuing education and training is required for workers to stay current with the latest developments, skills, and new technologies required for their fields. Overall, Continuing education and training is considered a way for technicians to keep abreast of their fields so that they don't lag behind.

India is expected to be home for skilled workforce of 500 million by 2022. About 12 million persons are expected to join the workforce every year. The Leather Sector is expected to provide jobs to about 2 million learners/workforce by 2020, which will be 56% of the estimated new workforce of 3.6 million and 33% of the total workforce of 6.1 million by 2020. This talent pool needs to be adequately skilled. More important is to focus on advancement of skill and these skills should be catered to emerging economic environment.

This Institute aims to identify the availability of jobs and corresponding need of skilled man power. Such, Skill Development programs are being offered to jobless youth. This Institute will strive to fulfill the above requirements by offering various need based programs. With these objectives, CFTI, Chennai have conducted training for 6628 candidates looking to the need of all stake holders.

Industries recognize the availability of choice of bright and talented technicians with requisite skills from CFTI, Chennai, who can solve challenging problems and add value to the organization .

My hearty congratulations to the entire team of students and faculty who put their heart and soul to make it to the top!

SIGNIFICANT ACHIEVEMENTS OF CFTI, CHENNAI
FINANCIAL YEAR 2015-2016

1. 91 candidates completed training during 2015-16 under long term course category
2. Total no of 6628 candidates completed training during 2015-16 under short term course category.
3. Pradhan Mantri Kaushal Vikas Yojana (PMKVY)- 4209 Nos, TNSDC (Placement linked training programme) - 1727 nos, NSDC - PMKVY (RPL) - 786 nos, were completed by this Institute for FY 2015-16 under NSQF Compliance
4. PMKVY training programme completed for 597 candidates at Tripura state in North East India FY 2015-16.
5. The unique feature of CFTI, Chennai on training programmes shows 84% women participants FY 2015-16
6. Campus interviews were conducted by CFTI, Chennai for the long term course completed candidates (2014-15) during the month of June 2015 and the candidates were placed in M/s. Sara Group, Bangalore, M/s Irbaz Shoes, Ambur and M/s Raadhika Exports, Chennai etc.
7. PMKVY certificates issued to the eligible candidates at Ambur in the presence of Hon'ble MP. Mr.Senguttuvan, Mr.Rafeeque Ahmed - Chairman - CLE, Mr.Ramesh Kumar,IAS,ED, CLE on 20th February 2016
8. New tie up made with The Gandhigram Rural Institute – Deemed University, under Ministry of HRD,for technical assistance in establishing the footwear workshop for the "B.Voc Footwear and Accessories Design" course
9. This Institute got notification to conduct Assessors Competency Evaluation exams under MES
10. Rendered Consultancy works for Tamilnadu Text Book Corporation Government of Tamilnadu towards inspection of factories participated in the tender for free sandal supply to the school students of Tamilnadu
11. The Physical testing laboratory is established in CFTI, Chennai during 2014-15, initially for training purpose and now setting up for commercial under common facility services.
12. CFTI, Chennai achieved the total number of trainees trained FY 2015-16 by 6719 Nos which is 96% higher than when in comparison FY 2014-15
13. Revenue earnings of CFTI, Chennai FY 2015-16 is Rs.752.47 Lakhs which is 66% higher than when in comparison FY 2014-15.
14. Participated in Designer Fair – 2016, Chennai during 31st Jan 2016 to 3rd Feb 2016
15. Participated in India International Leather Fair 2016, Chennai during 31st Jan 2016 to 3rd Feb 2016
16. Participated in UITIC Footwear Congress-2016, Chennai during 3rd to 5th Feb 2016
17. World skill day celebrated on 15.07.15 through TNSDC & PMKVY
18. CFTI, Alumni started during the year 2014-15, around 75 Alumni have registered their names in our website.
19. CFTI, News letter in the name of "Footwear Chronicle" started during the year 2015-16 on quarterly intervals' and the Third edition of Footwear chronicle by CFTI, Chennai is in your hand.
20. An Exclusive Placement cell of CFTI, Chennai established during 2015-16, helps the students of CFTI and CFTI Alumni to create a Job assistance platform for both employers as well as job seekers.
21. CFTI, Chennai is having many success stories from passed out trainees in setting out of new units (or) being in a good position with leading Footwear Manufacturers
22. The total damages caused by Flood has been recovered back to normalcy particularly in the area of Training assets within 45 days from the date of flood devastation

ABOUT THE INSTITUTE

CENTRAL FOOTWEAR TRAINING INSTITUTE (CFTI), Chennai an autonomous Institution under Ministry of Micro Small & Medium Enterprises, Government of India and has been working for development of Human Resources for Footwear & Allied Industries since 1957. It got modernized through UNDP in 1993 and equipped with complete set of modern infrastructure. It conducts various Long term, Short term and Part time techno managerial courses in Footwear, Leather Goods and allied subjects. One of its premier courses is Two year Diploma course in "Footwear Design and Production" which is approved by Textile Institute, London, UK and 11/2 years Post Graduate Higher Diploma course in Footwear technology & Management studies is accredited with Textile Institute, London, UK.

AIM OF THE INSTITUTE

(a) To provide training and related inputs to develop and augment a class of trained personnel in Footwear Technology and Allied Industry in the country.

(b) To develop human resources in Footwear and Allied Industry by introduction of advanced training methods and courses, appropriate knowledge and skills to promote rapid growth of footwear and allied industry in the country.

(c) To promote in general and particular, the Indian Footwear Industry to attain international standards of production.

INFRASTRUCTURE

- The Institute is endowed with complete infrastructure for conducting training programmes. Land & Building at prime location in Chennai.
- Equipped with complete set of modern machinery, tools & equipments.
- Important Footwear & Material testing machines.
- Well equipped library with text books, periodicals, journals & handouts related to footwear technology, industry management and trade.
- Teaching aids including OHP, Slide & LCD Projector, Audio, Video System & Computer, with shoe CAD facilities.
- Qualified, trained and Experienced Faculty.

OPPORTUNITY FOR STUDENTS

- Highly prospective career to suit the need of Footwear and Allied Industry in appropriate levels.
- Self-Employment by establishing own Industry of Trade.
- 100% placement record till date.
- Suitable base for higher studies in Footwear field.
- Study at Leicester college of Footwear, UK.

OPPORTUNITY FOR ENTREPRENEURS & INDUSTRY

- Providing Techno-Managers to Footwear Industries.
- Technical Consultancy Services to existing and prospective Industries.
- Common Facility Services with Modern machinery including Shoe CAD.
- Process cum Product oriented EDP on Footwear, Leather Goods and Allied Industries.
- Availability of relevant information of Footwear Industry.
- Services of Die - Less Cutting System, PU Pouring Machine & Physical Testing Lab.

PRODUCT RESEARCH AND DEVELOPMENT & SHOE CAD

The Institute through PRD Cell, undertakes :

- Responsibility of New Product development as per the given specification and concept.
- Development of Master Patterns and Grading of the components to different sizes through latest shoe CAD.
- Conversion of Different pattern files and cutting the patterns there of through Universal Converter system.
- Training on Shoe CAD.

OTHER ACTIVITIES

- Skill Upgradation Courses for Rural Artisans.
- Exclusive courses for SC/ST, BC/MBC and Women candidates.
- Courses for International Participants.
- Linkage with Footwear related Industry, Trade, Association and Organisations.
- Need Based Training Program for Industry, sponsored candidates.
- Specialized training programs on Productivity & Quality improvements.
- Patronized with "The Textile Institute, London, UK".
- Member of Satra, UK
- 2 years Diploma Course approved by TI / Leicester College of Footwear Technology, London, UK
- 1.5 Years Post Graduate Higher Diploma course (PGHD) extended with six weeks of International training exposure at Leicester College of Footwear London, UK
- 100% Placement record

SERVICE TO THE FOOTWEAR INDUSTRY

CFTI through its State of the art machinery provides common facility services to the footwear industries. With the latest machines the Die-Less Cutting System, Sole mould making plant and PU Pouring machine expects to expand the service network to the industry. Further to this the Ambur Sub-Centre of CFTI caters the service nees of the Footwear Industries of Ambur, Ranipet & Vellore.

TRAINING ACTIVITIES CONDUCTED BY CFTI, CHENNAI

- CFTI conducts Skill Development Training Programmes for rural Footwear, Leather Goods artisans of Tamil Nadu in their locality. The objective of this programme is to develop the Footwear, Leather Goods making skill to the rural artisans at their door step. These programmes have good response among the artisans as they acquire technical knowledge on material management, cost effective programme etc.
- CFTI conducts a Technology Based Entrepreneurship Development Programme **(TEDP)** sponsored by Enterepreneurial Development Institute **(EDI-Chennai)**, Government of Tamil Nadu. (Programme duration - 6 weeks) for Leather Goods Making. Target Group for this Programme are Graduates / Post- Graduates in Science or Engineering & Technology / Diploma in Engineering / Technology.
- CFTI conducts 1 year Long Term course namely Certificate Footware Technology & Short Term course in Footwear Making sponsored by Dr. Babu Jagjivan Ram Leather Industries Development Corporation Ltd. **(LIDKAR),** Government of Karnataka.

National Skill Certification and Monetary Reward Scheme (STAR Scheme)

The Government of India scheme was implemented to Leather Sector by CFTI, Chennai through NSDC (National Skill Development Corporation), Ministry of Finance in association with Leather Sector Skill Council (LSSC(a section 25 company under CLE (Council of Leather Exports) as affiliated training partner for Footwear Industries.

The Core objective of this programme is to encourage skill development for youth by providing monetary awards for successful completion of approved training programmes. 1,996 candidates were trained by CFTI, Chennai till August 2014, thus achieving the target set by LSSC

Placement Linked entry level training programme

Placement Linked Entry Level Training Programme (TNSDC)

CFTI , Chennai completed "Placement Linked Entry Level Training Programme" funded by Tamilnadu Skill Development Corporation (TNSDC), Government of Tamilnadu through Leather Sector Skill Council (LSSC) for 2,300 candidates on job roles like Stitcher (1,250 Nos.), Cutter (250 Nos.), Paster, Attacher, Folder (250 Nos.), Skiver, Splitter & Table Helper (250 Nos.), Leather Weaving (300 Nos.) during the year 2014-2015.

Pradhan Mantri Kaushal Vikas Yojna (PMKVY)

This Institute conducts training on **"Pradhan Mantri Kaushal Vikas Yojna (PMKVY)"** (a Phase II of the STAR Scheme) which aims to skill unemployed youth by the **New Ministry of Skill Development & Entrepreneurship (MSDE)** on the approved National Occupational Standards of NSDC. CFTI, Chennai conduct & completed training for **1,054 candidates** on various job roles till November 2015.

Recognition of Prior Learning (RPL)

Recognition of Prior Learning (RPL) is a platform to provide recognition to the informal learning learning through work to get equal acceptance as the formal levels of education. RPL is a process of assessment of an individual's prior learning to give due importance to learning as an outcome rather than learning as process.

Under PMKVY, special focus is given by this Institute to RPL by recognizing prior competencies of the assessed candidates and provides a certificate and monetary reward on successful completion of assessments.

POWER-GENERATING SHOES COULD SOLVE SMARTPHONE BATTERY ANXIETY

Source - Internet

A footwear-embedded device that harvests and stores energy from human footsteps could be used to recharge smartphones and other power-hungry devices in the future.

Developed by American researchers, the power-generating shoes could help everyone who frequently needs to use their phone away from the grid. The military could make use of the technology to power not only mobile phones but also radios, GPS units and night-vision goggles. It could also help in developing countries and other areas without proper access to electricity.

"Human walking carries a lot of energy," said Tom Krupenkin, Professor of mechanical engineering at the University of Wisconsin-Madison, who led the research. "Theoretical estimates show that it can produce up to 10 watts per shoe, and that energy is just wasted as heat. A total of 20 watts from walking is not a small thing, especially compared to the power requirements of the majority of modern mobile devices."

A typical smartphone requires less than two watts, which means the power generated by walking would be enough to power even larger devices such as tablets, laptops or flashlights. However, engineers have struggled so far to make the technology efficient.

"We've been developing new methods of directly converting mechanical motion into electrical energy that are appropriate for this type of application," Krupenkin said.

The team took advantage of a phenomenon known as reverse electrowetting, which uses a conductive liquid interacting with a nanofilm-coated surface to directly convert the mechanical energy into electricity. Krupenkin pioneered this approach in 2011, proving it could be used to generate useable power. The only limitation of reverse electrowetting is that it requires a power source with quite a high frequency – something that human motion is not.

"Yet our environment is full of low-frequency mechanical energy sources such as human and machine motion, and our goal is to be able to draw energy from these types of low-frequency energy sources," Krupenkin admitted.

The researchers therefore designed a device that creates miniature bubbles at a very high speed that grow and collapse, pushing conductive fluid back and forth, generating electrical charge.

"The high frequency that you need for efficient energy conversion isn't coming from your mechanical energy source but instead, it's an internal property of this bubbler approach," Krupenkin explained.

The proof-of-concept bubbler device generated around 10 watts per square meter in preliminary experiments, and

theoretical estimates show that up to 10 kilowatts per square meter might be possible.

"The bubbler really shines at producing high power densities," said Krupenkin. "For this type of mechanical energy harvesting, the bubbler has a promise to achieve by far the highest power density ever demonstrated."

The power-generating shoes could be connected to the smartphone via a cable or even be turned into a wi-fi hotspot, acting as a middle-man between the smartphone and the network. That would decrease the energy requirements of smartphones, extending the time between recharging by up to 10 times.

"For a smartphone, just the energy cost of radio-frequency transmission back and forth between the phone and the tower is a tremendous contributor to the total drain of the battery," said Krupenkin.

The team is currently looking for industry partners who could help them commercialize the technology.

- By Prasanna S. Rao
Faculty / Technical Expert
Bengalure - Karnataka

NIKE LAUNCHES ITS FIRST SELF-TYING SHOES

Nike has unveiled its first self-tying shoes called "HyperAdapt1.0". Built on Nike's adaptive lacing technology, the shoes are aimed at reducing athlete distraction and will automatically tighten as soon as the wearer steps into them. Technical lead Tiffany Beers said, "[T]here are two buttons on the side to tighten and loosen. You can adjust it until it's perfect".

A SUSTAINABLE FOOTWEAR FROM TYRES

Durability of Shoes: This is for those who maintain an active lifestyle especially for those hiking, playing, camping, and working outdoor. Water wears out a shoe quicker than anything else. A few trips in and out of the creeks, puddles, and swamps, and they just come unglued or a sole replacement cannot be done. If it is not happening with water, then the soles will wear out on gravel. It is really amazing that tyre companies can manufacture a tyre and warranty the tread for some 50,000 miles, yet we can wear out the sole on any ordinary shoe in less than a year. Now you can imagine the durability – strength of the tyres which are manufactured. How come we cannot buy a shoe with a 50,000 mile warranty? Here we have a complete solution for all these problems.We are already done with lot of researches on durable leather components. 'Rubber Tyres' is listed as the latest one. Even though we all are satisfied with the comfort ability offered by all the conventional shoes in the market designed specifically, the aspect of 'durability' still has a scope for research. It has been proved that the durability and strength of the tires made it as a best suitable product for footwear making.

As we do not go bare foot all the time, our foot tends to be a tender one. We need protection and comfort as well for all our casual activities and durability. Moccasin is the best comfortable casual shoes, but not durable. Maintaining a casual shoe/ footwear like moccasin very often is difficult. It is not necessary that it should be a full shoe to provide you comfort and durability. Using of 'crepe rubber' sole was the first found solution for this durability issue. It was flexible and comfort as well, but had a problem of slipping off from the shoes, i.e. your foot will no longer stay in the right place inside the shoe/ sandal when trying to balance.

Cracking of the sole was the main reason for less durability. Here we have a solution found out by Mr. Thomas J. Elpel's who follow all primitive living skills throughout his life. The idea which he tried is protecting the soles with a mixture of pine pitch, charcoal, and dried manure. It was found that it could be finished neatly on the sole of your tracking shoes to protect the sole from cracking. He tested it for durability by wearing it practically and using it for few days for tracking and then continued this process. It gave him best results. But it is not possible to keep doing this process very often, so we need a material which has these materials embedded in it. Yes, tyres are the one. A tyre is an advanced engineered product made of a lot more than rubber. Fiber, textile, and steel cord are just some of the components that go into the tyres inner liner, body plies, bead assembly, belts, sidewalls, and tread.Tyre cords have been made of cotton, rayon, nylon, polyester, and glass, but steel and polyaramid (an extremely hard and stiff synthetic fibre) are currently the dominant materials in use. Various rubber compounds are used in different parts of the tyre.

Thomas developed some tyre sandals referring some Mexican tyre sandals. He was most impressed with the fact that there was no glue, and no stitching or strapping on the bottom of the sole where they would be exposed to the ground. Instead he cut the sole with some side tabs out of the tyre as one contiguous piece. The first model was a little crude in appearance, but was amazingly comfortable. The field tests of the sandals were quite exciting. The tyre sandal and moccasin combination meant that he was able to develop "modular" shoes, with less of expense and efforts, sustainable as well. Now, with this durable sole, we can construct our comfortable shoes with all its comfort requirements.

Why tyres are Durable? It is nearly impossible for tyres to decompose easily. Due to their structure, tyres take thousands of years to decompose. So technically saying, the first tyre ever made is still out there somewhere. So it's clear that used tyres are environment

pollutants. As an effort to destroy it, burning tyres will lead to toxic oils and fumes to the atmosphere which will be hazardous for the living habitats. Preventing tyres from polluting the environment we can repurpose these indestructible tyres into the soles of some of the most durable footwear around. Surprisingly it satisfies all the physical properties required for a sole material.

Process: Tyres are collected from garages and tyre brokers paying per tyre, from different parts of the country and brought to the workshop. Tyres are inspected for required quality,

Process of making soles from rubber tyres

damages and then cleaned. The side wall of the tyre is cut manually and various cutting devices are used to cut the tyre into the shape of sole. Each sole will be unique at the bottom (pattern), durable, flexible and supportive. The artisans construct uppers from leather or any natural materials with skilled hand stitches and different techniques. With the help of a shoe last, upper is fixed with the sole applied through a bit of hammering, pulling, gluing, pressing and heating up. If required, machine stitching or hand stitching can be done for the upper to be more secured with the sole while flexing

Sustainable Designs in Market: To make the tyre-to-shoe process a reality, Timberland and Omni United have established an industry-first tyre-return and chain-of-custody process to ensure the tyres go directly to dedicated North American recycling facilities to begin their path toward a second life.

An Ethiopian firm 'Sole Rebels' which is recycling tyres into shoes does a roaring business via internet. Ethiopian entrepreneur Bethlehem Tilahun Alemu says Old truck tyres never die, they just turn into sandals. For decades that has been the tradition in Ethiopia, where everyone from farmers to guerrilla fighters has fashioned worn-out road rubber into cheap, long-lasting footwear. The success of 'Sole Rebels' which has thrived in the global market with no outside support other than a government line of credit to help meet large orders, is challenging preconceptions both about Ethiopia and the best way to lift its people out of poverty.

We have certified 'B Corporation' companies ('Business as a Force for Good') which are into footwear manufacturing from used tyres. This certification proves that a particular company meets the rigorous standards of social and environmental performance required by the nonprofit B Lab. It shows the organization is transparent with their operations, routinely providing glimpses of their production process on our social media platforms. These kind of companies which gets 'B Corporation' certification are called as 'B-CORPS'.Let's be a part of B-Corps to protect our environment with sustainable designs.

This year, several companies around the world have been showing renewed interest in recycling, investing between $5 million and $10 million each into the Closed Loop Fund, a $100 million effort to invest in recycling infrastructure and put more recycled materials into manufacturing supply chains.

- By Sreeshma Vignesh, CFTI, Chennai

NOW, RECYCLE YOUR OLD SHOES!!

British scientists claim to have developed the world's first comprehensive system for separating and recovering useful materials from old footwear.

The newly developed recycling process is able to granulate and segregate leather, plastic foams and rubber so that they can be re-used in products ranging from rubber playground surfacing to new shoes, researchers said.

The system was developed and tested at Loughborough University's Innovative Manufacturing and Construction Research Centre (IMCRC).

"Footwear is incredibly difficult to recycle as it can contain up to forty different types of material, many of which are stitched or glued together," said Professor Shahin Rahimifard, who led the project.

"In the process, the first, manual step is to pre-sort shoes into broad types, such as trainers, and to recover metals, such as eyelets. Next the shoes are automatically shredded and granulated, with the granules automatically separated into four waste streams: leather, foams, rubber and other material.

The shoes are turned into 3-4 mm fragments using a granulator.

Low-cost air-based technologies developed by the project then separate the materials by exploiting their different sizes and weights.

An air-cascade separator first removes lighter textile particles and other fine leather and foam residues by blowing them away from heavier granules; then a series of vibrating air-tables separate rubber from foam and leather by stratifying the granulated materials, with lighter granules ending up on top of heavier ones.

For each recovered material stream, there are a variety of applications.

Recovered leather fibers can be reformed to produce bonded leather sheets and reclaimed rubber can be used as a running track or playground surfacing product.

For some types of footwear rubbers, finely ground rubber can be put back into new shoe soles - achieving so-called 'closed loop' recycling while recycled foams can be used in underlay material for laminate floors and carpets.

A key use for mixed textiles and other lighter residues could be as insulation material for buildings, researchers said.

The team has also developed a computerized tool that advises footwear designers on materials selection and helps them explore whether particular combinations of materials would make recycling harder or easier.

The more similar two materials are in density, the harder it is to separate granules made of them, driving up the cost of recycling.

- By Prasanna S. Rao
Faculty / Technical Expert
Bengaluru - Karnataka

PRODUCTIVITY AND COMPETITIVENESS FOR FOOTWEAR INDUSTRY

1. Productivity and Footwear Industry :

The immediate thoughts that come to our mind when we talk about Footwear industry are as follows :

This is Labor Intensive industry , so look for cheap labour.

This is a wrong concept. Rather than looking at what is the wage like the wage per month or per day or per hour , we should look at the productivity of person per month per day or pa hour. This should be our labour policy , because once the wage goe up and productivity remains same it will be very difficult to sustain which is now faced by many footwear companies.

The next question is competitiveness. Competitiveness is not the growth sale volume. It is market penetration, which the rates of growth of market share.

Productivity is the key for competitiveness . For long time productivity has been in the back seat for Indian Footwear Industries due to cheap labour and dollar appreciation.

Now the situation is different. Following are present day facts which force us to rethink our operation management strategy for footwear industry – where Productivity. has to be the key theme,..

- India is going to be the manufacturing hub of Asia and the world, with specific reference to leather industry. This is going to see more and more manufacturing capacity, heating up true competition.
- The labor cost will steadily increase and it will not be easy to find them.
- The customers will be more and more demanding such as more variety and less volume and lesser and lesser lead times.
- The management has to set aside resources for regulatory requirements such as environmental responsibility and societal responsibility.

Productivity as an operational strategy is the only weapon to combat this challenge.

2. Productivity Basic Concepts:

We need to make definitions simple and experienceable to make them work. Any thing that can not be experienced can not be learnt and worked. That way productivity is experienced with following phenomenon.

- More output with given input
- Productivity is doing more and more with less and less.
- Less manpower ,Less Material ,Less Machine , Less Time
- We tend use more manpower, more material, more machines and more time because of unhidden and hidden wastes.
- So Productivity is nothing but elimination of waste.

3. The Vicious Circle from lesser productivity :

Loss of productivity, unless supported by extraneous factors, will progressively dither the sustenance of the business as explained in the following figure.

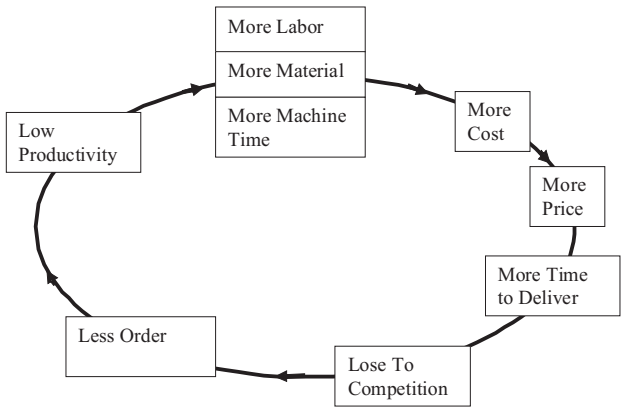


Figure -1

4. Simple Diagnosis of Productivity

The essence of productivity in conjunction with value addition can be easily understood by looking at the time line concept.

A time line (A very useful perspective from Japanese Management Techniques) is normally taken as the time between the customer order and shipment. (The refined

definition goes up to receiving the payment from the customer.) This timeline consists of two parts. Basic Work Content (Due to Value Adding activities) and Additional Work content (Due to Non Value Added Activities (NVAs)). Depending on the organizations sensitivity to productivity, the time line concept will be depicted as in following figure.

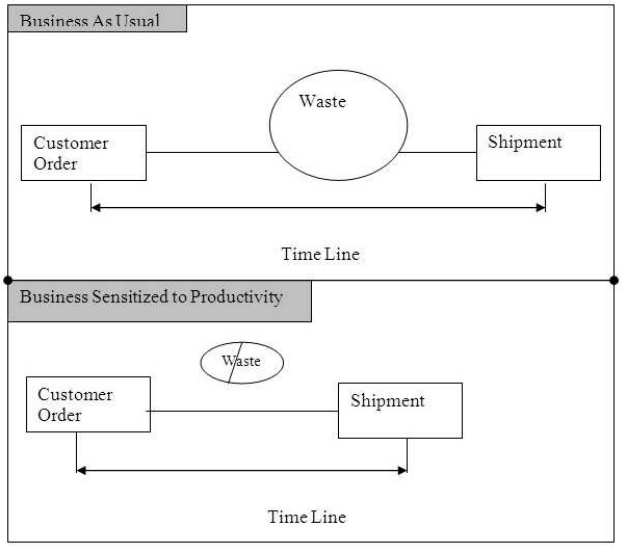


Figure-2

5. Non Value added Activities: (NVAs)

Non Value Added activities are those activities , which add to cist of production but not add value to the product. (Ex: Counting) .The more non value added activities, removed, more is the productivity. In the previous section also we talked about basic work contents and additional work content marked by non value added activities. The relationship between basic work content, additional work content through non value added activities, and a possible classification of such NVAs, is shown in the following diagram.

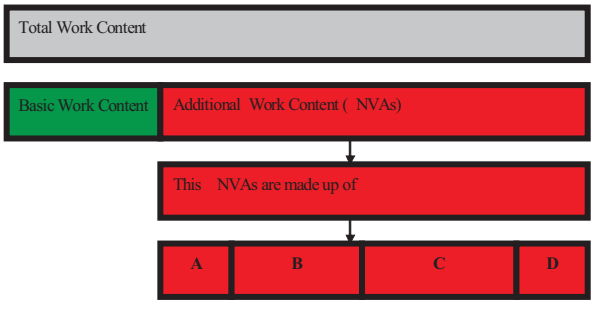


Figure -3

6. NVA – Drivers

The chief contributors to NVAs identified in figure 3 as A , B , C , D are as follows:

A. These are non value added activities which are contributed by wrong/inefficient design or specifications of the product.

Example : Bad design of product, Lack of standardization, in correct Quality standards, Excess Material

B. These are non value added activities which are contributed by wrong/inefficient methods of manufacturing or operation.

Example : Wrong machine used, Process not operated correctly, Wrong tools Used, Bad Layout, Wasted Movements, Operative's bad working methods

C. These are non value added activities which are contributed by shortcomings of the management.

Example : Idle time due to short runs , Lack of Standardization , Design changes , Bad Planning , Lack of Raw materials , Machine break downs , Sub optimum Conditions of machines ,

D. These are non value added activities which are contributed by shortcomings of the operators.

Example**:** Absenteeism, Slower rating, Careless workman ship

7. Initiatives for Productivity Improvement

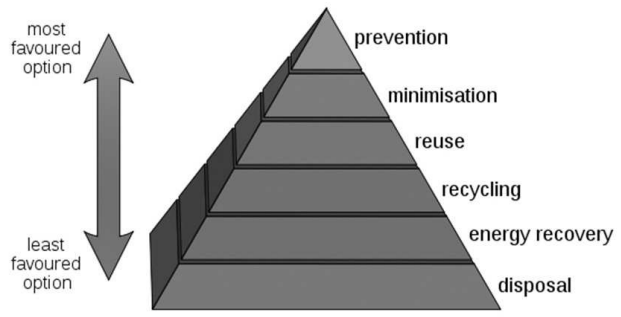
Initiatives for productivity improvement should be a organization wide strategy guided not sporadic exercises. Efforts should be to diagnose the NVAs based on the above classifications, and appropriate initiatives should be implemented. While the middle management provides the leadership and support, the action has to come from supervisors and workers. This will make the productivity improvement as a sustainable movement.

- By M.Raja Chidambaram
URs Productively

POTENTIALS OF INVESTING IN RECYCLING

Present trend of major companies is to invest in recycling: Recycling is a very familiar term for all of us. As we know, it is the conversion of a used product/ waste/ any by-product into a new product. Technically expressed as a process of converting waste materials into reusable objects to prevent waste of potentially useful materials, by reducing- the consumption of fresh raw materials, energy usage, air pollution (from incineration) and water pollution (from land filling) by decreasing the need for "conventional" waste disposal and lowering greenhouse gas emissions compared to plastic production. Recycling is a key component of modern waste reduction and is the third component of the "Reduce, Reuse and Recycle" waste hierarchy. Here comes the importance of Waste Hierarchy -It is the evaluation of processes that protect the environment alongside resource and energy consumption to most favourable to least favorable actions (ref. pyramid given).

The waste management hierarchy indicates an order of preference for action to reduce and manage waste, and is



usually presented diagrammatically in the form of a pyramid. The aim of the waste hierarchy is to extract the maximum practical benefits from products and to generate the minimum amount of waste. The proper application of the waste hierarchy can have several benefits. It can help prevent emissions of toxic gases, reduces pollutants, save energy, conserves resources, create jobs and stimulate the development of recycling technologies.

The Environmental and Climate Costs of Using Virgin Materials: Virgin materials are natural resources that are extracted in their raw form that are traditionally used in industrial or manufacturing processes. Example of virgin material is plastic resin derived from petroleum refining process, and mined/processed metals. It's important to realize that the problems of waste start well before something is thrown in a trash bin. Everything that eventually lands in an incinerator or landfill was born of some type of raw material, and this connection between waste and resources must be recognized. It doesn't take any great mental leap of faith to understand that the more waste that is eventually generated, the more raw materials, or resources, are consumed. And since disposable, non-durable, and non-recycled goods still make up the majority of the waste stream, this creates a big demand for the raw materials that'll make up their replacements.

Now it just so happens that the production of goods using virgin materials is much more energy intensive than manufacturing goods from recycled materials. In general, more energy is required to extract, process, and transport the virgin materials. Higher energy consumption equals greater waste generation which in-turn will become the root cause of hazardous environmental conditions. For example: when producing materials from virgin steel, copper, glass or paper, net carbon emissions are four to five times higher than if produced from recycled materials.

Environmental Protection Agency figures out a lot of valuable materials

continue to be wasted which could be reused by recycling efficiently. That represents a massive business opportunity, according a 2012 report. This paved a way for green investments throughout the industries.

Sustainability for footwear production: Footwear industries are now into using sustainable and recycled materials for their production. Let's go through the evidences of it in the market. The most commonly used sustainable materials by thefootwear manufacturers are: Sustainable/ Better cotton, Recycled Polyester, Recycled Nylon, Recycled Polystyrene, Recycled Rubber, Environmentally preferred rubber, Polylactic Acid (PLA), Tencel (a fibre made from wood pulp), non-mulesed wool for apparels (Mulesing is the removal of strips of wool-bearing skin from around the breech (buttocks) of a sheep to prevent flystrike/ myiasis) and Processed Leather into their samples. They are also cautious about materials which should not be used in a footwear industry.

Footwear and accessory manufacturers likeAdidas, Nike, Puma etc are sourcing various recycled materials such as inlay soles, textiles, metals, plastics, packaging and rubber. They also have tie-up with companies which supply 99 % recycled shoe accessories to incorporate into their production. For example, they have companies who supply injected plastic plates for football boots are now recycling 99% of that waste back into production. And they have also been able to increase the percentage of rubber and EVA that can be reground and reused in shoes.

To bring more sustainable products from design to consumer we face a number of challenges, ranging from the variety of materials used to managing resulting waste. For each challenge, we have to assess the risks involved and have to develop and to apply an appropriate approach that seeks ways to reduce consumption of materials and handle them responsibly throughout the manufacturing process.

One way to optimize the use of materials is to continually assess and reduce the overall number used in our products. This focus also helps to manage cost and complexities in both the design phase and the supply chain. Replacing traditional materials with EPMs (Environmentally Preferred Materials) is rarely a straight-across exchange. It requires understanding characteristics of the material as well as its availability. Just because we find a material that works does not mean it is available at the quantity and price when and where we need it.

Economists have agreed that trash can be a good estimate of economic activity in addition to GDP (Gross domestic product is the monetary value of all the finished goods and services produced within a country's borders in a specific time period. Though GDP is usually calculated on an annual basis, it can be calculated on a quarterly basis as well. That's because for everything we consume, there should be an equal amount of trash produced. For a business to be sustainable, someone has to do the dirty work and deal with all the outputs, yet the industries that deal with commercial garbage are diverse, dispersed, and fragmented. Recycling is the best way to create a sustainable design and for a sustainable business. Recycling companies/ agencies collect and process appliances, medical waste, metals, plastics, paper and much more to reduce the effects of garbage on the environment and potentially repurpose these materials. Not all recycling facilities can be profitable but they serve a social good.

Evidences in the market: Nike defines Environmentally Preferred Materials (EPMs) as materials that have significantly lower impact on the environment in one or

Footwear Chronicle

Tariff of Common Facility Services

Job work cost under common facility services in CFTI, Chennai while rendering its services to common facility services with its modernized setup and infrastructure to all Micro Small and Medium Enterprises on hourly basis and few on job basis.

The lists of machine for utilization with its charges are listed here under

DESIGN SECTION

* 1 Series = Single Article upto 6 sizes (Max)

Sl.No	Job Description	Code	Qty Available	Description in Details	UOM	Cost in INR
1	Digitizing & Pattern Grading (1.01)	1.011		For any Normal Construction	1 Series *	1200
2		1.012		For Boot & Mocassin	1 Series *	1500
3		1.013		Normal Model in Sandal	1 Series *	750
4		1.014		Punch Model in Sandal	1 Series *	1000
5	Marketing Patterns(1.02)	1.021		Type by Plastic	1 Series *	1500
6		1.022		Type by Insole Board	1 Series *	2500
7		1.023		Type by Shank Board	1 Series *	3500
8	Cut file on Paper patterns	1.03		Type by Chart	1 Series *	1000
9	Insole / Sole Grading	1.04		For Any Type	1 Series *	250
10	Vaccum Shell (1.05)	1.051		Less than 50 Pairs	1 Series *	120
11		1.052		More than 50 Pairs	1 Series *	60
12	Product Development (1.06)	1.061		Shoe	1 Series *	1500
13		1.062		Sandal	1 Series *	1000

CLICKING SECTION

Sl.No	Name of the Machine	Code	Qty Available	Make & Model	UOM	Cost in INR
14	Swinging Arm Clicking M/c	2.01	2	ATOM SE16 (16 T Capacity)	Per hour	100
15	Swinging Arm Clicking M/c	2.02	1	ATOM SE-18 (20 T Capacity)	Per hour	110
16	Travel Head Cutting Machine	2.03	1	ATOM -SP588 25 Tonnes	Per hour	250
17	Die-less cutting Machine	2.04	1	ZUND Model 2400	Per hour	500
18	Splitting Machine with width 400 mm	2.05	1	SEAZEN SZ 400	Per hour	150
19	Strap Cutting Machine (Circular Type)	2.06	1	Indigenous	Per hour	50
20	Strap Cutting Machine (Vertical Type)	2.07	1	Indigenous (TSE)	Per hour	50
21	Stamping Machine	2.08	1	BRUGGI	Per hour	50
22	Stamping Machine	2.09	1	Indigenous(TSE)	Per hour	50

CLOSING & PRECLOSING SECTION

Sl.No	Name of the Machine	Code	Qty Available	Make & Model	UOM	Cost in INR
23	Flat Bed Single Needle Machine	3.01	2	PFAFF -563	Per hour	50
24	Post Bed Single Needle Machine	3.02	5	PFAFF -491	Per hour	50
25	Post Bed Single Needle Machine	3.03	1	PFAFF -1293	Per hour	50
26	Post Bed Single Needle Machine	3.04	1	DURKOPP ADLER - 888	Per hour	60
27	Post Bed Single Needle Machine	3.05	1	DURKOPP ADLER-888 (Classic)	Per hour	60
28	Post Bed Double Needle Machine	3.06	1	DURKOPP ADLER-4280-611	Per hour	70
29	Post Bed Double Needle Machine	3.07	4	DURKOPP ADLER-2260 -211	Per hour	70
30	Cylinder Bed I Needle Machine	3.08	1	PFAFF - 335-H3	Per hour	50
31	Zig Zag Machine with cording	3.09	1	DURKOPP ADLER-527	Per hour	250
32	Skiving Machine	3.1	2	Torielli 11/72.3	Per hour	40
33	Strobel Machine	3.11	1	L-141	Per hour	100
34	Strobel Machine	3.12	1	KL-141-25	Per hour	100
35	Pneumatic Eyeletting Machine	3.13	1	Torrielli - 11/72.3	Per hour	40
36	Seam Rubbing & Tape Attaching Mc	3.14	2	Torielli 17 AS 93	Per hour	40
37	Crimping Machine (Type Hydraulic)	3.15	1	Seazen SZ-571	Per hour	250
38	Fusing & Lamination Machine	3.16	1	Torielli 06/PR 86	Per hour	50
39	Toe Puff attaching Machine	3.17	1	Torielli, Italy	Per hour	50

SOLE/INSOLE MAKING SECTION

Sl.No	Name of the Machine	Code	Qty Available	Make & Model	UOM	Cost in INR
40	Insole Moulding Machine	4.01	1	Torielli 4078/PB	Per hour	75
41	Insole Bevelling Machine	4.02	1	DASUNG	Per hour	60
42	Insole Rivetting Mc	4.03	1	BRUGGI -BRU-112	Per hour	50
43	Sole Buffing Machine	4.04	1		Per hour	70
44	Skiving Machine	4.05	1	Lee Foot	Per hour	50
45	Skiving Machine (Heavy Duty)	4.06	1	Torielli	Per hour	60
46	Skiving Machine (Heavy Duty)	4.07	2	Golden Rhombus	Per hour	50
47	PU - Pouring Machine (4.08)	4.081	1	PUMA James 3 (12 Station - Banana Type)	Per hour	1200
48	PU - Pouring Machine (4.08)	4.082	1	PUMA James 3 (12 Station - Banana Type)	Per pair	12

Footwear Chronicle

Tariff of Common Facility Services

FULL SHOE LASTING/BOTTOMING SECTION

Sl.No	Name of the Machine	Code	Qty Available	Make & Model	UOM	Cost in INR
49	Pre Forming (Moccassin) Mc (4 Pairs)	5.01	1	Torielli 1461 Per Hour	Per hour	75
50	Toe Moulding Mc (2 Hot & 2 Cold)	5.02	1	SEAZEN SZ -625	Per hour	150
51	Counter Moulding M/c (2 Hot & 2 Cold)	5.03	1	SABAL PR	Per hour	100
52	Fore part Conditioning (Mulling) Mc	5.04	1	ISMC -UK 11PP 1022	Per hour	65
53	Toe Lasting Machine(Hydraulic Type)	5.05	1	MOLINA -BIANCI Mobi 1	Per hour	300
54	Side & Seat Lasting by Thermoplastic	5.06	1	CERIM 58 E	Per hour	400
55	Seat Lasting Machine by Tacks	5.07	1	ORMAC -750	Per hour	100
56	Back Part Conditioning (Mulling) Mc	5.08	1	Indigenous	Per hour	45
57	Heel Seat Crowning Machine	5.09	1	Alen 211	Per hour	70
58	Pounding & Ironing Machine	5.1	1	Torielli - 17/ACG	Per hour	65
59	Hot Air Blower (Wrinkle Chaser)	5.11	1	Torielli BC	Per hour	60
60	Heat Setting Plant (4 Track)	5.12	1	Indigenous PRE	Per hour	175
61	Roughing & Scouring M/c	5.13	1	Torielli - CF78	Per hour	50
62	Roughing & Scouring M/c	5.14	1	Torielli - CF78 N	Per hour	50
63	Dryer & Reactivator	5.15	1	Indigenous PRE	Per hour	250
64	Sole Attaching Machine (Pneumatic)	5.16	1	Elettro Technica BC	Per hour	50
65	Sole Attaching Pneumatic (Hydraulic)	5.17	1	Sigma 756	Per hour	100
66	Chiller	5.18	1	BDF Chiller "O"	Per hour	200
67	Delasting Machine	5.19	1	Torielli 148/BA	Per hour	40
68	Topline (Collar) Forming Machine	5.2	1	Alen - 102 SR	Per hour	100
69	Brushing & Polishing Machine	5.21	1	Indigenous (TSE)	Per hour	50
70	Spray Booth with Finishing Table	5.22	1	Indigenous	Per hour	100
71	Combined Finishing Machine	5.23	1	Frankling KING	Per hour	100

SPECIAL PURPOSE MACHINES

Sl.No	Name of the Machine	Code	Qty Available	Make & Model	UOM	Cost in INR
72	Sole Stitching Machine	6.01	1	BUSM UK	Per hour	100
73	SideWall/sole stiching Machine	6.02	1	MECVAL CS 82 N	Per hour	250
74	Heel Nailing Pneumatic Machine	6.03	1	TORIELLI 192/SDV Lue Model	Per hour	75

GENERAL PURPOSE MACHINES

Sl.No	Name of the Machine	Code	Qty Available	Make & Model	UOM	Cost in INR
75	Compressor 3 HP	7.01	1	Indigenous 3 HP	Per hour	40
76	Compressor 5 HP	7.02	1	Indigenous 5 HP	Per hour	50
77	Compressor 25 HP	7.03	1	ELGI E 18, Germany	Per hour	120
78	Generator	7.04	1	Kilrloskar 36 L8-4	Per hour	750

For further details please contact:

The Director,

CENTRAL FOOTWEAR TRAINING INSTITUTE

65/1, GST Road, Guindy. Chennai - 600 032.

Phone: 044-22501529 Fax: 044-22500876

Email: cfti@vsnl.net Website: www.cftichennai.in

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MICRO, SMALL & MEDIUM ENTERPRISES

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Organizes

ADVANCED SHOE STYLING	3 MONTHS ₹. 18,000
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Admission - Download Application from www.cftichennai.in >Home Page >View Application from >Short Term. Submit the Filled in form with photo to;

The Director, Central Footwear Training Institute

65/1, GST Road, Guindy, Chennai - 600 032. Ph : 044-22501529

For more details contact Rakesh Sharma - 9884367247 / 9677943633 / 9677943733

Govt. of India Certificate will be issued.

Certificate Distribution Ceremony at Central Prison, Vellore on the 21st of March, 2016

"News Item Appeared in Satra Bulletin, UK"

SHOEMAKERS TRAIN INDIAN PRISONERS

More than 100 inmates of India's Vellore Central Prison for Men have been trained in leather stitching and skiving, to help them gain employment after their release. **The training was provided by the Central Footwear Training Institute in Chennai** and each prisoner involved received one month's training.

Inmates who were serving short-term and long-term sentences were selected for the programme. The men were helped to develop stiching and skiving skills as there are several leather trades operating in Vellore. On completion of the course, each prisoner received a certificate and a small stipend.

Visit of Mr. Graham Burns of M/s. Torielli to CFTI, Chennai on 6th Feb, 2016

Workshop on PFAFF Machines by M/s. Sagittarians held on 4th Feb 2016 at CFTI, Chennai

TRAINING PROGRAMME UNDER RPL

At Keerthi Shoes, Keelmonavoor on 24th Feb 2016

At Star Shoes Mottur on 23rd Feb 2016

At Sumaya Shoes Tiruvalam, Vellore on 18th Feb 2016

At Jon Shoes Kalaignar Thottam, Ammoor on 17th Feb 2016

At Sun Shoes Konavattam on 16th Feb 2016

Footwear Chronicle

TNSDC Training Programme

Leather Weaving Skill Training at Sumaya Shoes, Tiruvalam, Vellore from 10.04.0215 to 27.05.2015



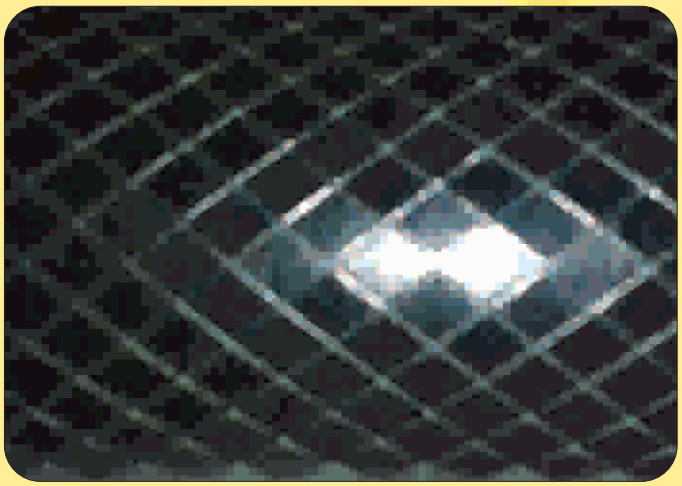


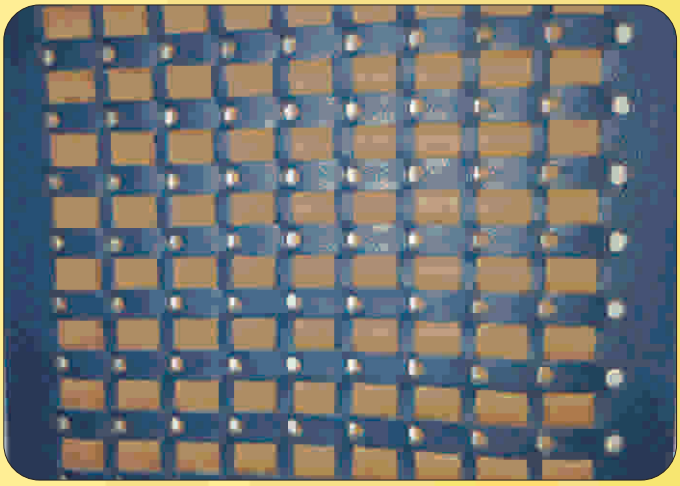


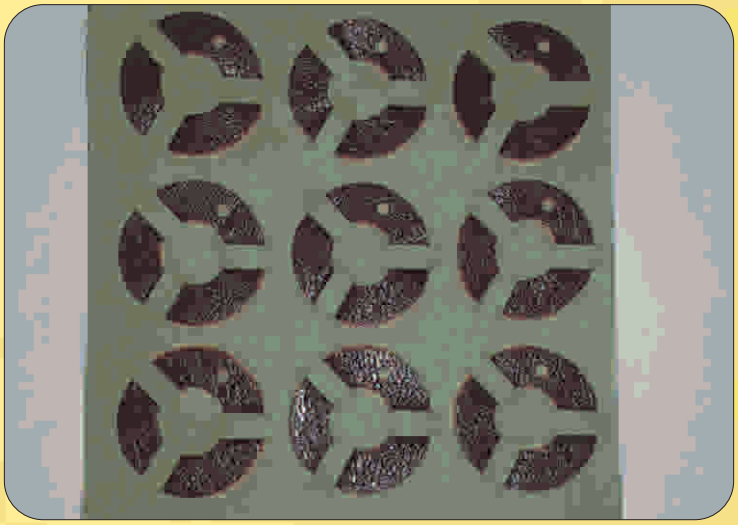


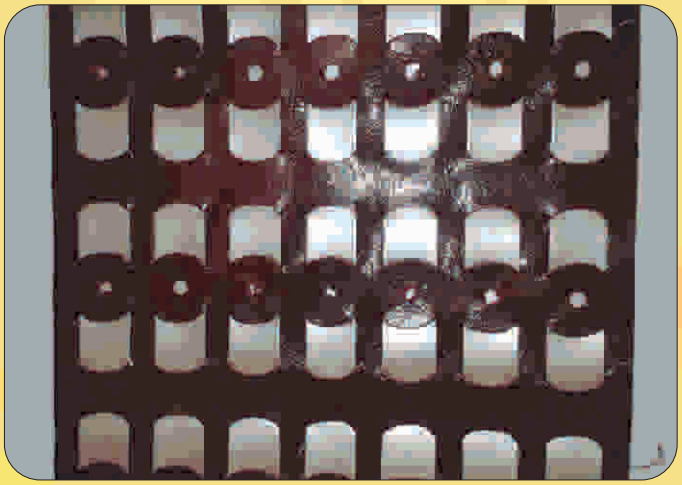

Footwear Chronicle

Advanced CAD CAM Interlace Designing Developed at CFTI, Chennai for MSMEs under Common Facility Services









Designs Conceived by : **P.A. JAIKUMAR**

Two Weeks Training Programme on Productivity conducted by URS Productively Productivity Academy at CFTI Conference Hall From 7.3.2016 to 19.3.2016

more categories of chemistry, energy, water or waste. We sustainable products can be achieved only if we address the materials used to make product. Therefore, we weigh the use of EPMs heavily in our product index system. Shifting to greater use of EPMs requires close partnership with suppliers to ensure they deliver against all their needs, including aesthetics, performance, price and compliance, as well as sustainability. In FY04 Nike launched the first environmentally preferred rubber formulation for use in footwear products.

The Adidas Group and Nike Groupare committed to increasing the sourcing volumes of cotton from the 'Better Cotton Initiative' (BCI) over the next years. Organic cotton is a natural fiber grown and harvested without the use of synthetic chemical pesticides, fertilizers and defoliants. It looks, feels and wears just like conventional cotton. Not only does the BCI aim to reduce the use of pesticides, it also promotes efficient water use, crop rotation and fair working conditions. By 2018 Adidas have committed to source 100% of cotton in all their products as sustainable cotton. 'Sustainable cotton' in this sense means Better Cotton, certified organic cotton or any other form of sustainably produced cotton that is currently available or might be in future.

Using more sustainable materials such as Recycled polyester (PES) is one way to improve our environmental footprint while working well with high performance products for the athletes. PES is a synthetic fibre based on post-consumer waste, such as plastic bottles and used garments. The raw material is reprocessed and spun into fibres. Using recycled PES has many benefits over virgin polyester that is made from petroleum. It helps to reduce dependency on petroleum, allows discharging less waste and reduces toxic emissions from incinerators. It has got environmental benefits over virgin polyester. Adidas is using this more in their apparels and footwear.

Standard nylon is made from petroleum. Recycled nylon is made from post-industrial and post-consumer waste, including discarded industrial fishing nets that are sometimes left in the ocean.In general, using recycled nylon has many benefits over standard nylon: it helps reduce our dependence on petroleum and allows us to discharge less waste, contributing to a reduction in toxic emissions from incinerators that would otherwise be needed for waste disposal.

Adidas has developed a new sustainable material to be used in the heel counters of footwear products. The heel counter is a little insert in the heel area of the shoe; it is rigid so that it supports and stabilises the wearer's heel inside the shoe. It is not possible to see the heel counter though; it's internal and covered on both sides by material.The new heel counter, called Framaprene® ECO, contains more than 50% recycled content made of old food packaging.Overall, since spring/summer 2014, 'Framas' is now producing 110 million pairs of heel counters a year for the Adidas Group, which means that each year they divert 1,500 tones of polystyrene waste from landfill sites.

Alternatives have been found for PVC and Phthalates and stopped using PVC in all mainstream applications and nearly all styles of Adidas Footwear. Their global product ranges are now PVC-free. They have also eliminated the usage of polyethylene chloride for having a similar environmental footprint as PVC.Adidas and Nike have also reduced the use of Volatile Organic Compounds (VOCs) typically found in solvents used in footwear manufacturing process.

Puma, the German sports goods company, is searching for alternative materials it can make its products from, shifting from its traditional use of virgin

raw materials like leather and rubber. Puma's first attempt at using alternative raw materials resulted in the re-tooling of one of the company's most iconic products, the "Suede" shoe dating back to the 1970s. What Puma did was to dump the virgin leather and rubber used in the original. Instead, the rubber came from recycled tyres and the shoe's uppers were made from rice husk, a waste product from rice processing. The result was the Puma "Re-Suede".

The lessons from the Re-Suede were extensive. Every part of the Puma shoe-making process was impacted. Designers had to learn to work with new materials, which had to be sourced from different suppliers to the ones that Puma usually works with. The rice husk uppers made for a lighter shoe, compared to a leather shoe. As a result, shipping costs were lower, which Puma emphasised with new lightweight packaging for the Re-Suede. Overall, Puma estimates a savings of fifteen tones of carbon emissions for every ten thousand pairs shipped. And the consumer needed to be told a different marketing story. Thanks to the shoe's sustainability credentials, a shoe made from waste materials and which cost less to ship had a higher selling price than the traditional shoe, and consumers were happy to pay that because they were buying the overall story of how the shoe came about.

Over the past few months, nine companies have invested between $5 million and $10 million each into the fund: Colgate Palmolive, Coca-Cola, Goldman Sachs, Johnson & Johnson, Keurig Green Mountain. PepsiCo and the PepsiCo Foundation, Procter & Gamble, Unilever and Walmart and the Walmart Foundation. More investors are expected to be announced in the next two months.

IFC's (International Finance Corporation – World Bank Group) investment approach is to promote development of waste industry in emerging markets, help reduce costs, and allow the industry to become competitive. We support integrated solid waste (SW) management approach, with regional strategies to gain economies of scale and drive down costs.IFC also provides transaction advice to national and municipal governments in emerging markets to implement sustainable PPPs that improve living standards and promote long-term economic growth. Our work balances the requirements of investors with public-policy considerations and the needs of the community.

Seeing Black

Some of the money may be used to purchase advanced technology that can divert more waste to recycling markets. Take, for example, optical sorters, a technology that can visually detect different types of materials. Technology can't recognize it currently, but definitely it will happen in near future as we are in need of it. Now-a-days on the consumer goods side, people are less aware of all these. In future the world will be all behind using a sustainable product, as a part of your contribution to the environment and economy you live in. This is not only a philanthropic venture. Despite impressive gains in collecting recycled materials for new development or production, it will create a huge impact in our environmental conditions by cleaning it up for healthy living conditions. (Philanthropy means an organization distributing or supported by funds set aside for humanitarian purposes. Philanthropic venture is "more of a blanket term, an expression of a more purpose-, results- and responsibility-driven worldview")

- by SreeshmaVignesh
CFTI, Chennai

CHECK YOUR SHOES

There are set standards which force the manufacturer of shoes to comply. These standards are amended or modified by different countries when the chemicals found in them are noxious or toxical to the end user and environment.The Footwear that we make goes as EARTH FILLER hence to be thought how long the worn-out shows takes time to degrade without harming the life on earth.

For theseabove reasons thestandards like CEN(UK), ECHA (Europe), REACH(Korea), UNE(Spanish), BS(Baby Harness Standard), CSPA(Washington), CHCC(Japan Law) have set Legislative requirement and specifications for recommended limitations which can be friendly.Due to some or other manufacturing requirements are forced to use the restricted Chemicals.The AZO dyes are the colourants when comes in direct contact to the skin causes Dermatitis. The Chromium VI is a new EC regulation.This also again causes Dermatitis when it directly contacts with the skin.

In order to overcome these we tend to use textiles as linings that come to contact with the skin. Even these TEXTILES we use as linings contain these restricted chemicals. We are required to follow the restrictions and specifications regulated by the importing countries.

The natural fat liquor from the leather causescloudiness on dark coloured Leathers. This take away the appearance of the shoes whenreaches its destination at a different climate during TRANSIT. The chlorinatedfat liquors also give a bloom.Lead,Nickel andCadmiumare restricted in children's shoes.As they cause damage to development of Brain in growing children. At times kids below 6 years use the shoes like TOYs and mouth them.EC-Toy safety directiveis applicable to shoes made for children below 6 years of age.Lead is presentin most metals is restricted by the Washington Stale Law.Chemicals like Polycyclic aromatic Hydrocarbons (PAHs), Fumarates, Organostannic compounds are restricted. Even the adhesives and finishes used should be specified with permitted amount of toxinswhen exporting the shoes to the particular region forth which the entire stock hangs at their ports.

This article is dedicated to help the Footwear Industry who handle the shoes.Even the Small,Tiny sectors doing job work services to the exporters.They are expected to use stipulated recommended processes and materials to avoid stagnationof consignment for want of clearancetargeting the above discussed reasons.

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USE OF LIFE CYCLE ASSESSMENT TO FOOTWEAR

LCA can be defined as a tool for helpingenvironmental decision making, by means of identifying theenvironmental impacts produced by a product or a process.These environmental impacts are identified by detecting theinputs and outputs of a product life cycle, which is definedas the set of phases from raw material extraction to wasteprocessing, i.e. from the cradle to the grave. This 'cradle-tograve'approach allows one to look beyond the company'sown gates, and thus detect unexpected side-effects of its policiesor important impact-generating phases

Life cycle analysis (LCA) techniques have emerged in the last 30years and are now well established as an effective tool to measure the impact of a product or process on the environment in an effort to reduce the environmental burdens. The life cycle assessment framework consists of four phases. They are: goal definition and scoping, inventory analysis, impact assessment and improvement analysis. The researcher has to define the intended use of the results and users of the result. The definition of the scope of the LCA sets the borders of the assessment – what is included in the system and what detailed assessment methods are to be used . The second step (inventory analysis) includes inventory of the inputssuch as raw materials and energy and the outputs such as wastes and emissions that occur during the life cycle. The third step (impact assessment) is integration of inventory elements into an assessment of environmental performance which requires theemissions and material use to be transformed into estimates of environmental impacts. The results of this stage of LCA are termed as 'ecoprofile'. The final step is interpretation of the results of impact assessment and suggestions for improvements.

The footwear industry is very important, due to the amount of people working in it – both directly and indirectly– and due to its turnover; the main part of this production is exported. The most important sector in this industry is that of medium-high quality leather shoes,which require good marketing techniques to be sold. Recently, this marketing is partially supported by environmental criteria as a guarantee of quality. For this reason,assessment tools like LCA, which allow a more thorough knowledge of the products to the enterprises and can help to guide the environmental policies, are strongly recommended. The main phasesof footwear life cycle are animal care, slaughterhouses, tannery, footwear confection, domestic use and the waste management.

Life Cycle Assessment has been chosen as the methodology to study the life cycle of the product from an environmental point of view. The goal was to point those steps in the footwearcycle – from animal care for the production of hides to wastemanagement – which most contribute to the total environmental impact, in order to be able to guide further applications ofthe method and improvements of the process. Both economical and social aspects are excluded from the analysis, as well asrisks and human labour.

System Boundaries

The inputs and outputs of this system range from the production of raw materials to the disposal of the shoes to landfill. Within this system, the process of shoe assembly includes only energy information and there are no processes for the use phase due tolack of data availability. LCA does not include the disposal of process wastes or the manufacturing of ancillary materials. In addition, the inputs and outputs from production lifecycles associated with the building of the machines, themanufacturing facilities and transportation vehicles, as well as additional operations(lighting, heating of building and production of fuels and electricity) are not being considered due the

lack of available raw data to support a credible assessment.

Environmental Impact Categories, Category Indicators and Selection Rationale

The environmental impact categories and associated category indicators for this LCIA, and LCA have been selected based on the research of both the environmental impacts caused by footwear industry. The ten categories selected are listed below.

The results of the Life Cycle Inventory are assignedto the impact categories listed below, creating category indicator results. The results ofthe LCIA and LCA have been presented in either absolute terms or normalized to world values. The process of normalization involves dividing the absolute emissions by the total world emissions to provide a fraction of the product systems contribution to world emissions.

Acidification Potential (AP), [kg SO_2-equivalent] - AP is the measure of a compound's contribution to acidification, the process whereby specific air pollutants are converted into acid rain. Acid rain damages forests, lakes, freshwater and coastal ecosystems, man-made structures, and leaches heavy metals from soils into groundwater. The primary air pollutants which cause acidification, sulfur dioxide SO_2, ammonia NH_3, and nitrogen oxides NOx, are mainly emitted by burning fossil fuels (European Environmental Agency, 2008).

- **Eutrophication Potential** (EP), [kg Phosphate-equivalent] - EP is the measure of a chemical compound's contribution to eutrophication, the process in which excess nutrients are added to an aquatic ecosystem. Eutrophication occurs when the addition of a limiting plant nutrient, usually nitrogen or phosphorus, causes increased algal growth. The algal growth and decay decreases dissolved oxygen inthe water causing aquatic life to die.
- **Freshwater Aquatic Ecotoxicity Potential** (FAETP), [kg DCB-equivalent] **Terrestrial Ecotoxicity Potential** (TETP inf.), [kg DCB-equivalent]

Marine Aquatic Ecotoxicity Potential (MAETP inf), [kg DCB-equivalent]

Human Toxicity Potential (HTP inf.), [kg DCB-equivalent]The toxicity potential of all of the above environmental impact categories are measured in 1,4-Dichlorobenzene (DCB) equivalent. DCB (C6H4Cl2) is an organiccompound primarily used as a pesticide or disinfectant. The toxicity of eachcategory (freshwater, terrestrial, marine and human) is determined by the chemicaland toxicological properties. This genericfate and exposure model determines the numerous exposure routes. These routesinclude the inhalation of gases and particles, ingestion or direct cutaneous absorption, resulting in skin, eye or throat irritation, damageto the liver and central nervous system and even death in flora and fauna (EPA,2008).

- **Global Warming Potential** (GWP 100 years), [kg CO2-equivalent] – GWP measures the radiative forcing (W/m2) of greenhouse gas emissions relative to CO2over the course of 100 years (EPA, 2006).Climate change is a growing concernfor the footwear manufacturing industry. In light of proposed carbon regulations it is important for companies to be aware of their greenhouse gas emissions.
- **Ozone Layer Depletion Potential** (OLDP), [kg R-11-equivalent] - OLDP is the measure of a chemical's potential to destroy stratospheric ozone molecules relative to trichlorofluoromethane (or R-11, CFC-11.Freon-11) (EPA 2007). Despite the Montreal Protocol banning the production of CFCs, ozone depletion remains a significant environmental concern. Continued ozone layer depletion causes severe health impacts (cancer, cataracts), as well as damage to aquatic ecosystems. · Photochemical Ozone Creation Potential (POCP), [kg ethane-equivalent] - Combustion processes emit volatile organic compounds (VOC's)

which react with nitrogen oxides in the presence of sunlight to produce ozone. Ozone in the troposphere (ground-level ozone) causes human health problems and ecological damage (EPA, 2004). Ozone-forming emissions are subject to regulation under the Clean Air Act. Ethane (IUPAC name ethylene) is used as the category indicator because it is one of the most important ozone-forming VOC species and its chemical degradation pathways are well-defined

- **Radioactive Radiation** (RAD), [DALY] RAD refers to the release of materials capable of emitting ionizing radiation as waves or particles. The natural environment possesses varying degrees of background radiation caused by solar energy or terrestrial sources (potassium and uranium), but human contributions of radioactive materials can lead to radiation levels which can cause biological harm, including damage to DNA and cells. RAD is measured in disability-adjusted life year (DALY) which counts years of 'healthy' life lost due to poor health. One DALY is equivalent to one lost year of 'healthy' life.

Life Cycle Inventory Analysis & Life Cycle Impact Assessment Assumptions

With the limited data available for this study, assumptions regarding the footwear production and distribution system were made. It is important to note, that the use ofassumptions have the potential to influence the output of the LCA, as well as impose limitations. Therefore, it is critical that all assumptions made during this study were consistent across all shoes. This consistency diminishes any inaccuracies that wouldaffect the relative impacts of each shoe. The assumptions fall into five categories : general, material, transportation, packaging and EoL. The long lists of emissions and consumptions produced in the inventory phase are presented in **Table 1**.

General Assumption

- The use phase has minimal environmental impact and is not used in this system.
- The lifetimes (primary use phases) for the shoes pertinent to this study.

Material Assumptions

- different types of leather are used in a shoe, mainly cow leather (for the outsole), bovine leather (for the upper material and/or the insole and stiffener), and goat leather (lining). Every one of these types has its own production system.
- hides (the prime materials for leather) are not the only products for cattle. Other co-products include, of course, edible meat, milk (in the case of dairy cattle), manure (used as fertiliser), bone (also used as fertiliser and to make "bone china"), blood (animal feed), tallow (soap production, oleochemical industry, etc.), ligaments/cartilage, etc...
- All of the natural fiber materials (hemp, jute, organic cotton and bamboo) go through a production process to convert raw fibers into a fabric that is similar to cotton production process. For this reason the cotton production process is assumed as representative and the ratios of inputs and outputs remain constant.
- The process of polyethylene terephalate granulate was chosen as it most closely resembles the PET used by Simple Shoes.

Transportation Assumptions

- After evaluating the distance travelled and researching common transportation vehicle used to carry various loads of commodities, it was assumed that the following vehicles are utilized in this supply chain
- The utilization ratio, the percentage of the payload that is actually used, is 85%.
- The average distance from Simple Shoes' to retail stores. This distance has been calculated by grouping the retailers by their zip codes (first two digits).

Table 1 : Summary of the inventory results of the life cycle of 1000 hours of leather lady footwear

Substance	Unit	Cattle raising	Slaughter - house	Tannery	Footwear manufact.	Waste manag.	Transp.	Total
Known Inputs from Technosphere								
Materials								
NaCl	g	0.00E+00	5.54E+01	8.50E+00	0.00E+00	0.00E+00	0.00E+00	6.39E+01
$Ca(OH)_2$	g	0.00E+00	0.00E+00	1.62E+01	6.18E -01	0.00E+00	0.00E+00	1.68E+01
$Cr_2(SO_4)_3$	g	0.00E+00	0.00E+00	3.96E+00	0.00E+00	0.00E+00	0.00E+00	3.96E+00
Oils and Tannins	g	0.00E+00	0.00E+00	2.71E+01	0.00E+00	0.00E+00	0.00E+00	2.71E+01
Syntans	g	0.00E+00	0.00E+00	1.30E+01	0.00E+00	0.00E+00	0.00E+00	1.30E+01
Waste wood	g	0.00E+00	0.00E+00	0.00E+00	3.02E+01	0.00E+00	0.00E+00	3.02E+01
Energy								
Electricity	MJ	1.85E -02	1.24E -02	3.34E -01	4.44E+00	0.00E+00	0.00E+00	4.80E+00
Fossil Fuel	MJ	3.02E -01	1.26E -02	1.50E+00	2.06E -01	0.00E+00	5.15E -01	2.54E+00
Known Inputs from Nature								
Water	g	n.d	5.42E+02	8.18E+03	3.39E+03	0.00E+00	0.00E+00	1.21E+04
Outputs to Technosphere (Wastes and Products)								
NaCl (solid)	g	0.00E+00	1.14E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E+02
Tanned trimmings	g	0.00E+00	0.00E+00	5.75E+00	1.72E+00	0.00E+00	0.00E+00	7.47E+00
Entrails	g	0.00E+00	3.87E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E+01
Fleshings	g	0.00E+00	4.86E+01	2.07E+01	0.00E+00	0.00E+00	0.00E+00	6.93E+01
Salted split	g	0.00E+00	0.00E+00	2.59E+01	0.00E+00	0.00E+00	0.00E+00	2.59E+01
Tanned split	g	0.00E+00	0.00E+00	0.00E+00	2.38E -01	0.00E+00	0.00E+00	2.38E -01
Hair	g	0.00E+00	0.00E+00	1.31E+01	0.00E+00	0.00E+00	0.00E+00	1.31E+01
Shavings	g	0.00E+00	0.00E+00	1.48E+01	0.00E+00	0.00E+00	0.00E+00	1.48E+01
Buffing dust	g	0.00E+00	0.00E+00	6.88E -01	0.00E+00	0.00E+00	0.00E+00	6.88E -01
Packaging	g	0.00E+00	0.00E+00	0.00E+00	7.74E+01	0.00E+00	0.00E+00	7.74E+01
Shoes	g	0.00E+00	0.00E+00	0.00E+00	9.78E+01	0.00E+00	0.00E+00	9.78E+01
Known Emissions to Nature								
Air								
NO_x	g	1.84E -01	7.91E -03	2.50E -01	1.03E -01	1.21E -02	6.72E -01	1.23E+00
SO_x	g	1.87E -01	2.87E -03	3.37E -01	2.18E+00	3.32E -03	7.94E -02	2.79E+00
CO_2	g	1.94E+02	1.99E+00	1.32E+02	6.54E+02	3.94E+01	4.05E+01	1.06E+03
CH_4	g	8.91E+00	3.13E -03	0.00E+00	0.00E+00	1.69E+01	0.00E+00	2.58E+01
N_2O	g	2.98E+00	9.70E -06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.98E+00
NH_3 (gas)	g	2.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.31E+00
Hydrocarbons	g	1.31E -01	7.14E -04	2.71E -02	2.82E -03	3.46E -03	1.07E -01	2.73E -01
Water								
NaCl	g	0.00E+00	7.07E+01	3.18E+01	0.00E+00	1.90E -01	0.00E+00	1.03E+02
Chrome (III)	g	0.00E+00	0.00E+00	3.38E -01	0.00E+00	0.00E+00	0.00E+00	3.38E -01
Suspended solids	g	8.04E -01	1.17E+00	1.34E+01	1.58E -01	6.14E -03	0.00E+00	1.55E+01
COD	g	7.45E -02	2.40E+00	2.57E+01	1.26E+00	3.16E -01	6.03E -04	2.97E+01
$N\text{-}NH_3$ (aq)	g	1.71E -03	1.81E -01	1.59E+00	0.00E+00	1.23E -02	0.00E+00	1.79E+00
Soil								
Nuclear wastes	g	2.44E -02	9.50E -03	2.56E -01	1.59E+00	0.00E+00	0.00E+00	1.88E+00

Table values are from Int. J. LCA 3 (4) 1998 203 - 208.

Packaging Assumptions

- The weight of the master shipping carton has been allocated to account for one shoe box. The packaging materials used in the LCA were chosen as they most closely resemble the materials utilized by Simple Shoes.
- Simple Shoes' packaging processes requires minimal energy input. Based on literature review a energy value of .261MJ has been used .
- The benefit of using recycled packaging materials has only been incorporated into the model once, at the materials initial use.
- It is assumed that a percentage of the packaging materials (paper and cardboard)will be recycled and not sent to landfill

End of Life Assumptions

- The jurisdictional nature of this process suggests that the distance between consumer and landfill is minimal. In addition, the impacts associated with the transfer of the commodity itself are aggregated with otherproducts also destined for landfill disposal.
- The output of power generated from landfill gas energy capture is considered a net benefit in this LCA. However, this net benefit of power is not incorporatedinto the system to offset primary production.
- Recycling processes for the various materials utilized by Simple Shoes are excluded in this LCA. Without fully identifying recycling centers capable of reprocessing the materials pertinent to this study and calculating their associated distances, there is an inadequate basis for performing this assessment.

Life Cycle Assessment Recommendations

- The results of the LCI and LCIA indicate that the production of leathers, synthetic materials and plastics have the highest environmental impact across multiple environmental impact categories. To reduce this impact, Simple Shoes should remove these components from their products or develop more environmentally friendly practices for extracting and processing the materials.
- A majority of the environmental impacts associated with shoe production were associated with toxicity potential (freshwater, terrestrial, marine and human). The robustness of the environmental impact category of toxicity is still in debate among international experts, so while this category was high for the four shoes analyzed, efforts to reduce toxicity potential should be balanced with efforts to reduce AP, GWP, POCP. These efforts may include reducing energy consumption, investing in renewable energy and implementing pollution control devices.
- The LCIA demonstrated that of the main supply chain phases (materials production and assembly, transportation, EoL and packaging), the former process was responsible for nearly 90% of the environmental impacts. A majority of the impacts being associated within one phase serves as an opportunity for Simple Shoes to develop targeted efforts and programs to reduce overall environmental impact.
- Thanks to the LCA, we have been able to detect the important indirect impacts associated to the shoe manufacture stage, which seemed of minor importance before this preliminary study.

References

1. Llorenç Mila, Xavier Domènech, Joan Rieradevall, Pere Fullana, Rita Puig, Application of Life Cycle Assessment to Footwear, Int. J. LCA **3** (4) 1998 203- 208.
2. Kyle Albers, Peter Canepa, Jennifer Miller, Analyzing the Environmental Impacts of Simple Shoes,2008.
3. Llorenç Mila, Xavier Domènech, Joan Rieradevall, Pere Fullana, Rita Puig, Use of Life Cycle Assessment in the Procedure for the Establishment of Environmental Criteria in the Catalan Eco-label of Leather.

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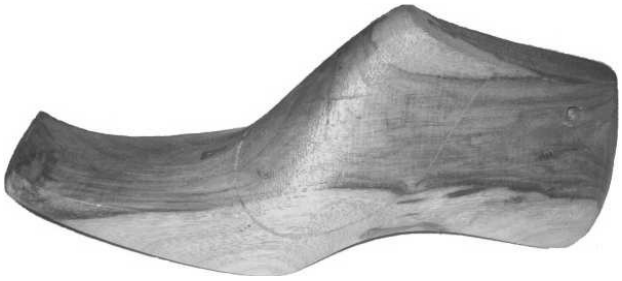
ADVANCED TECHNOLOGY IN SHOE LAST MAKING

Shoe Last was originally made from wood by hand using indigenous tools & equipments. It is the basic tool on which shoe is being made. Last is not an exact replica of the foot but a three dimensional wooden block which resembles with foot. It is not possible to make one pair i.e. two odds of Last identical by hand.

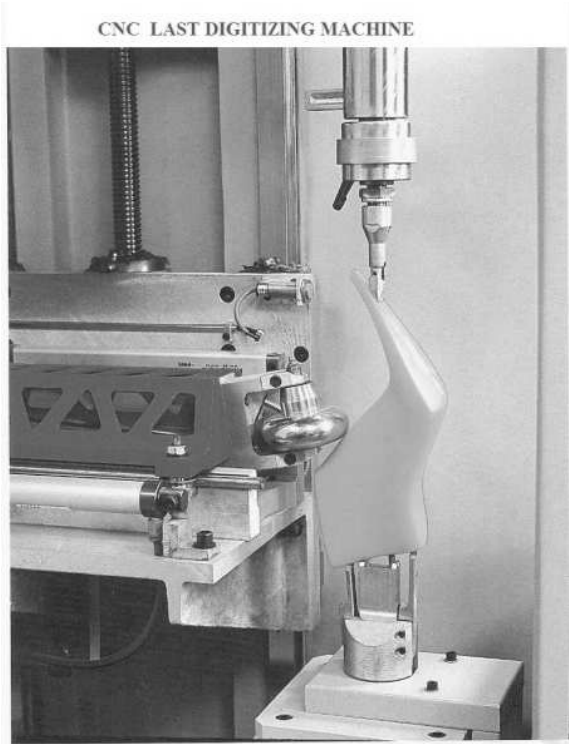


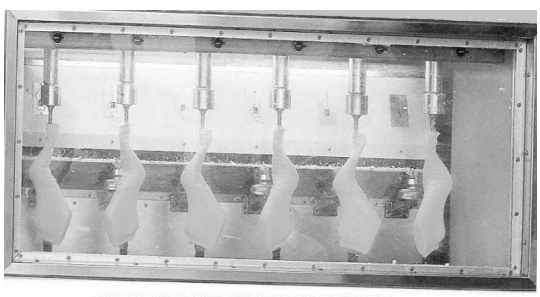
Wooden Last

Last making by Hand

Beside this, seasoned wood is also essential for quality Last making because unseasoned wood shrinks with time. As such in absence of "seasoned wood" machine made last also can't give you correct measurements. Plastic (HDP) material is the right answer.

1. First stage of modernizing the last making was the introduction of rough & fine turning machine for making the Last as well as use of seasoned wood or plastic block as a raw material. This was the first step of making correct fittings of Last. Model is clamped in the machine and copying of the same done accurately. Rough turning of last 15-17 pairs per hours & fine turning of Last 10 pairs per hours.
2. CNC turning machine has been introduced in the market for making Last. This enables to make the Last faster and more accurate. This system has also able to

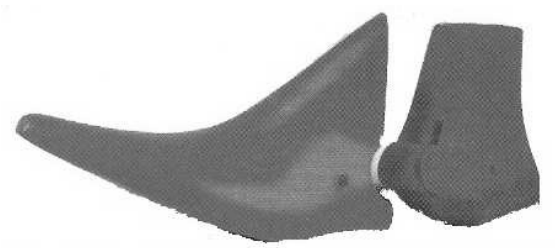




CNC LAST FINE TURNING MACHINE

produce Last without the help of a model Last in the machine.

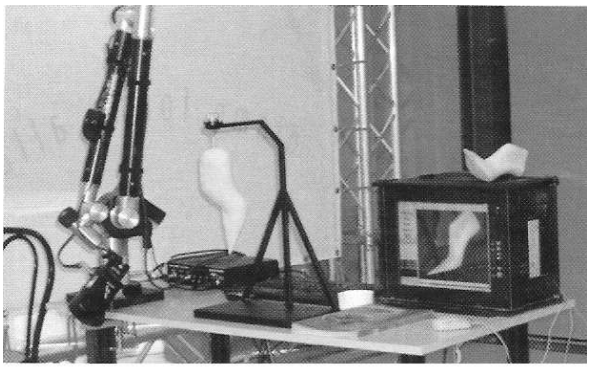
3. Model of the Last may be digitized and copied the same from the machine in a pen drive. From this pen drive we can down load the model on the corresponding CNC turning machine and can make the turning of the Last. Here we don't require any model Last to be clamped in the machine.



Two Parts of Moulded Last Made from Machine

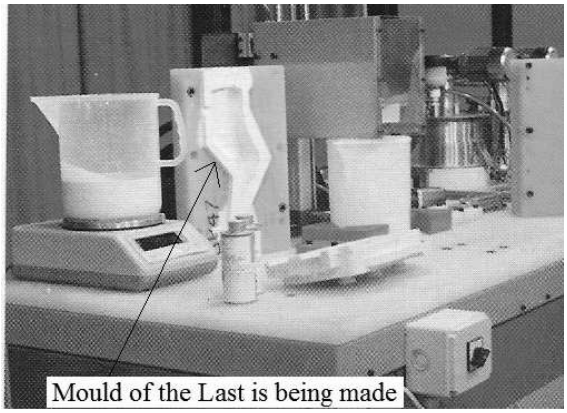
4. Last modeling through software. With the rapid development of the shoe industry software has been developed with help of that software we can easily develop a Last on the computer which can be transferred to a Turning / CNC milling / Rapid prototype machine to give the ultimate shape of the Last.

5. Most modern development of Last making made during 2005 was the **"Development of shoe Last by injection process with PU material".** M/s Molina e Bianchi, M/s Dow,Italia, & Dow Corning M/S Maxver, M/S Delcam M/S Arbo, all leader in their respective trade join hand together and developed a new system of Last making. The main attraction of this process is definitely the material. A special polyurethane formula with characteristic of hardness and strength fully equal to those of High Density PVC (polyethylene) normally used has been developed by them. This special compact polyurethane polymer made and

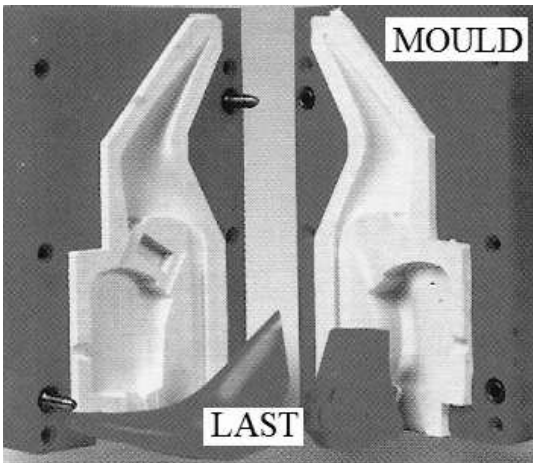


Wooden Last is digitized to create matrix through Cad-3D

marketed by M/S Dow Chemists under the brand name of **"Voraster".** The main characteristic of this PU material is the hardness combined with elasticity, reduced environmental impact and have a good stability while in store. With the



Mould of the Last is being made



help of this process Last for production lines as well as those for sample & prototype can be made. The accessories of last such as thimble, slot for unit spring, catches, and possible device for applying metal plates can be inserted while making (2) the Last mould. In fact the finished last comes out can be directly used by the manufacturer.

6. Stages of operation: 1.model making: the classical model of wooden Last that must be digitized. The matrix is created through Cad-3D.It is now processed on a numerically controlled machine (starting from a block of the same PU material from which the Last will be made) the cast in silicon material for moulding is obtained from the matrix.

7. The next very stage comes the injection moulding & actual production. This begins by inserting the silicon cast in to the cast holder followed by injection/ pouring in to the mould, at lower pressure, of the PU polymer that in a short time makes the Last. The entire process considering the polymerization of the material, cooling, etc, does not exceed 36 hours. In fact now the shoe manufacturer can decide to have the matrix made by the Last or the mould maker. Regarding the cost of polyurethane material, initially it will be higher than the polyethylene, this will level by the lower consumption. Thanks to the absence of waste which can arrive 65% in our traditional system.

Advantages

1. Simplified production process due to the material & construction technique
2. Shoe manufacturer have the means of producing Last
3. Flexibility in execution of small lot & repeat order.
4. Absolute geometrical accuracy of the final Last.
5. All the accessories of the Last are inserted during the injection process.
6. Lower & more easily controlled direct cost.

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B – CORPS & BENEFIT CORPS

Certified B Corporations (B-Corps) and Benefit Corporations (Benefit Corps) are both leaders of a global movement to use business as a force for good. Both meet higher standards of accountability and transparency. Both create the opportunity to unlock our full human potential and creativity to use the power of business for the higher purpose of solving society's most challenging problems.

B Corporations represent an emerging group of companies that are using the power of business to create a positive impact on the world and generate a shared and durable prosperity for all. B Corps are for-profit companies certified by the nonprofit B Lab to meet rigorous standards of social and environmental performance, accountability, and transparency. Today, there is a growing community of more than 1,600 Certified B Corps from 42 countries and over 120 industries working together toward one unifying goal: to redefine success in business. Some companies are both incorporated as benefit corporations and certified as B Corporations—others are just one or the other.

Certified B Corporations have undertaken the 'B Impact Assessment', scored over 80, and have signed a term sheet that declares that they will consider all stakeholders. It is a rigorous assessment that explores a company's governance, transparency, environmental and social impact. B Corps voluntarily hold themselves to a higher level of accountability in these areas.

Benefit corporations have raised capital from many different types of investors in the private markets from traditional to impact focused funds. An increasing number of investors are also supporting their own portfolio company's adoption of benefit corporation status. While many benefit corporations use the B Impact Assessment to create a free benefit report, benefit corporations do not need to reach a particular score, nor have their performance verified or audited by B Lab, or anyone else.

Many different types of businesses have become benefit corporations since the first law was passed in Maryland in 2010. The benefit corporations currently incorporated in the United States come from many different industries, including retail, manufacturing, tech, service, professional services, private education, and food and beverage production. Benefit corporations also come in all sizes, from small one-person service companies to large-scale international brands with many employees. A few examples of well-known benefit corporations include Method, Kickstarter, Plum Organics, King Arthur Flour, Patagonia, Solberg Manufacturing, Laureate Education and Altschool.

Certified B Corporations and benefit corporations are often confused. They share much in common and are complementary, but have a few important differences.

Issue	Certified B Corporation	Benefit Corporation
Accountability	Directors required to consider impact on all stakeholders	Same
Transparency	Must publish public report of overall social and environmental performance assessed against a third party standard	Same
Performance	Must achieve minimum verified score on B Impact Assessment	Self-reported
	Recertification required every two years against evolving standard	Self-reported
Availability	Available to every business regardless of corporate structure, state, or country of incorporation	Available for corporations only in 30 U.S. states and D.C.
Cost	B Lab certification fees from $500 to $50,000/year, based on revenues	State filing fees from $70-$200
Role of B Lab	Certifying body and supporting 501c3, offering access to Certified B Corporation logo, portfolio of services, and vibrant community of practice among B Corps.	Developed Model Legislation, works for its passage and use, offers free reporting tool to meet transparency requirements; No role in oversight

Today, there is a growing community of more than 1,229 Certified B Corps from 41 countries and 121 industries working together toward 1 unifying goal: to redefine success in business.

- by Sreeshma Vignesh

CFTI, Chennai

Inaguration of Khadi Footwear Unit at Ambattur by Mr. Poonatchi Minister for Khadhi Village Industries, Government of Tamil Nadu on the 4th of March, 2016 in the Presence of Mr. Sudalai IAS, M.D. Khadhi Village Industries

அம்பத்தூரில் ரூ.5¼ லட்சம் செலவில் புதுப்பிக்கப்பட்ட காலணி தொழிற்சாலை கட்டிடம்: அமைச்சர் பூனாட்சி திறந்து புதிய யந்திரங்களையும் இயக்கி வைத்தார்

PMKVY TRAINING PROGRAMME

At KRISHNAGIRI From 26.12.2015 to 26.01.2016



At Elakunni

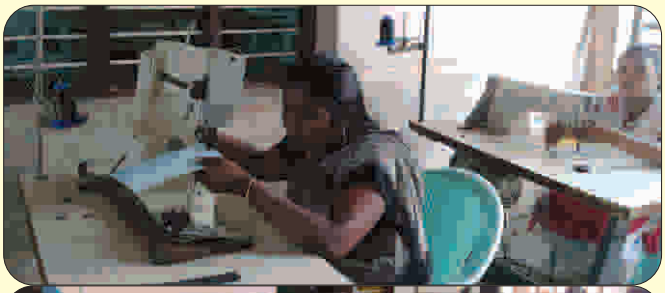
At PARANGIPETTAI From 28.01.2016 to 28.02.2016


At PICHAVARAM From 12.02.2016 to 13.03.2016


At SANKARANKOIL From 11.02.2016 to 13.03.2016


At SOMANDRAKUDI
From 11.02.2016 to 12.03.2016

At THALAIYUTHU
From 12.02.2016 to 12.03.2016



At TUTICORIN From 22.02.2016 to 23.03.2016

At WALAJABAD From 15.02.2016 to 16.03.2016

PMKVY Training Programme at North Eastern States (Tripura)

PMKVY Certificate Distribution Ceremony held on 20.02.2016 at Ambur Trade Center. Chief Guest was Shri. B. Senguttuvan, Hon'ble MP, Vellore

PMKVY Training Programmes Conducted by CFTI, Chennai
Group Photographs at Various Centers

MSME
सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME-TECHNOLOGY DEVELOPMENT CENTRE-CHENNAI

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Government of India

CENTRAL FOOTWEAR TRAINING INSTITUTE, CHENNAI

MSME - TECHNOLOGY DEVELOPMENT CENTRE

(Ministry of Micro, Small & Medium Enterprises, Govt. of India Society,)

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ADMISSION NOTICE

INVITES APPLICATIONS FROM ELIGIBLE CANDIDATES FOR THE FOLLOWING JOB ORIENTED LONG TERM & SHORT TERM COURSES.

S No	Name of the Course	Course Duration	Eligibile Qualification	Eligible Age	Course Fees (in Rs)					Scheduled Month for Commencement of Course
					Tuition Fees	Raw Material Fees	Caution Money Deposit	Moderation Fees	Total Fees	
1	Diploma in Footwear Design & Production	2 Years	12th Pass	17-25	70,000	30,000	5,000	18,000	1,23,000 for 2 Years	August
2	Post Graduate Higher Diploma in Footwear Technology & Management Studies (PGHD)***	18 Months	Any Graduate	35 Max	2,10,000	25,000	5,000	25,000	4,65,000** for 18 Months	January
3	Post Graduate Diploma in Footwear Technology	1 Year	Any Graduate	35 Max	50,000	10,000	2,000	N.A	62,000	September
4	Post Diploma in Footwear Technology	1 Year	Any Diploma	35 Max	50,000	10,000	2,000	N.A	62,000	September
5	Certificate in Footwear Technology	1 Year	10th	35 Max	32,000	10,000	2,000	N.A	44,000	July
6	Advanced Shoe Styling	3 Months	10th	18 to 35	18,000	N.A	N.A	N.A	18,000	Jan, Apr, July & Oct
7	Designing & Pattern Cutting	3 Months	10th	18 to 35	10,000	N.A	N.A	N.A	10,000	Jan, Apr, July & Oct
8	Shoe CAD	1 Month	10th	18 to 35	10,000	N.A	N.A	N.A	10,000	Jan, Mar, May, July, Sept & Nov
9	Shoe Upper Clicking	1 Month	8th	18 to 35	10,000	N.A	N.A	N.A	10,000	Jan, Mar, May, July, Sept & Nov
10	Shoe Upper Closing	3 Months	8th	18 to 35	12,500	N.A	N.A	N.A	12,500	Jan, Apr, July & Oct
11	Lasting, Full Shoe Making & Finishing	3 Months	8th	18 to 35	12,500	N.A	N.A	N.A	12,500	Jan, Apr, July & Oct
12	Leather Goods Making	1 Month	8th	18 to 35	10,000	N.A	N.A	N.A	10,000	Jan, Mar, May, July, Sept & Nov

☐ LONG TERM COURSE ☐ SHORT TERM COURSE

Note : 22.5% Seats are reserved for SC/ST candidates for which No Tution Fees will be charged subject to productions of caste Certificate, in original from competent authority at the time of submission of application and at time of admission.

- ** Rs. 4,65,000 for PGHD includes 6 weeks study at Leicester College, London, UK.
- 5 years age relaxation and 100 % Tution Fees exemption for SC/ST Candidates
- Cost of Application fee Rs.500 for Long term courses except PGHD Courses*** of Rs.600 & Rs.100 for short term courses. Filled in application forms should be submitted before the date of course commencement
- Part time courses (related to Footwear & Allied Field) are conducted on subject to demand basis.

For More Details Contact : 9677943633 / 9677943733