Footwear Chronicle

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Central Footwear Training Institute, Chennai

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a member of SATRA TECHNOLOGY CENTRE

Participation of CFTI students at CLE Design Competition

Participation of CFTI Students at CLE Designs Competition

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 मंत्रालय
निर्माण भवन, नई दिल्ली–110108
GOVERNMENT OF INDIA
MINISTRY OF
MICRO, SMALL & MEDIUM ENTERPRISES
NIRMAN BHAWAN, NEW DELHI-110 108

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.

19/5/16

(Surendra Nath Tripathi)

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SIGNIFICANT ACHIEVEMENTS OF CFTI, CHENNAI during OCTOBER - DECEMBER 2016

1. Entrepreneurship day-2016 was celebrated during November 2016 at CFTI, Chennai, with around 50 students and 20 staff members attending the function. Mr. Peter Racklyeft, The Chief Moderator of Textile Institute, UK, was the Chief Guest of the function with Mr. J.S. Jojan, CEO of NewShu International, Mr. Anantharaman, MD, Aggu Soles Pvt. Ltd, Mr. Dhayalan, Assistant Director, MSME, DI, Chennai and Mr. K. Murali, Director, CFTI, Chennai. The function concluded with few of the students expressing their interest to become entrepreneurs, which was welcomed by the guests
2. This Institute has conducted many Awareness Programs on Digital Payment to the MSMEs & Students of this Institute. CFTI, Chennai faculty conducted the awareness program. The session was very informative and interactive. MSMEs & Students showed keen interest in knowing the different modes of digital payments.

   Topics covered during the program: (FAQ)

   - ⇨ Bank Cards
   - ⇨ USSD – Unstructured Supplementary service data
   - ⇨ Pos – Point of Sale
   - ⇨ AEPS – Aadhar enabled Payment System
   - ⇨ UPI – Unified payment service
   - ⇨ Wallets – E wallet
   - ⇨ Is the beneficiary also required to register for UPI?
   - ⇨ How safe the Digital payment system?

   Awareness created among the participants, and advised all the participants to use the Digital payment system from now on and make the system more effective.
3. Placement details of long term students published in our website, News letter and also published at the entrance of this Institute.
4. This institute is registered as empanelled Training partner / agency in the field of footwear and allied sector under Tamilnadu Skill Development Corporation, Goverment of Tamilnadu.
5. To conduct Pradhan Mantri Kaushal Vikas Yojana (PMKVY) Phase 2 training programs, we have registered this Institute in SMART portal as per the guidelines of PMKVY Scheme.
6. Practice of using Central E-Procurement Portal is being used for procurement.
7. CFTI, Chennai conducted 2nd Consultative committee meeting on 15th December 2016 at Conference hall of this Institute. The 3rd Consultative committee meeting is scheduled to be held on 4th March 2017
8. Booklet & Success story video in DVD about the placement details of candidates trained by CFTI, Chennai under placement linked TNSDC Training programme during the year 2015-16 was released during December 2016.
9. Customized Short term training programme in Footwear making under ITEC Scheme for 7 Foreign Nationals through Under Secretary (Technical Corporation), Ministry of External Affairs, Government of India is under process.
10. CFTI, Chennai became empanelled Training partner and agency to conduct various Short Term Programmes under Central Leather Research Institute (CLRI) for the year 2016-17.
11. Shri. Vijay Kumar. G. Srkr, IAS, Vice Chairman & MD, A.P. SC Co – op Finance Corporation Ltd. visited this Institute along with Officials from CLRI Dr. Swarna V Kanth, Principal Scientist, &Shri. Mathivanan, Sr. Principal Scientist, SPDC during October 2016 and discuss to provide various levels of training programmes in their state
12. CFTI, Chennai has participated in the Fair, “Meet at Agra – 2016" during November 2016
13. 2nd Moderation for the 1st year & 2nd year Diploma in Footwear in Design & Production (DFDP) batch students completed by the Chief moderator Mr.PeterRacklyeft, London, UK.

From the Director's Desk

Shri. K. Murali

It is my immense pleasure to state that CFTI, Chennai record a remarkable achievement in placements during the year 2015-16 and we have proposed to organize a function during Feb 2017 to felicitate the companies who have helped CFTI, Chennai to achieve the remarkable feat of 95.3% placements under "Placement Linked Skill Training" sponsored by TNSDC and a workshop on Productivity improvement.

Various Central Government and State Government agencies are very happy about the performance of CFTI, Chennai and have reposed their faith & confidence by granting orders for conducting many training programs. CFTI, Chennai will be fully engaged in coming months with full of activities.

It gives me great pleasure to inform that students of CFTI, Chennai participated in the CLE Design Award – 2017" competition and I am indeed very happy to inform that 5 student participants of this Institute have bagged 3 first prizes and 2 second prizes. The awards will be presented by CLE on 3rd February 2017 at Hotel ITC Grand Chola, Chennai.

To improve the Design capability, facility and disseminate the activities of this Institute, CFTI - Chennai participates continuously in 32nd India International Leather Fair – IILF 2017 and in 2nd Designer Fair 2017 at Chennai.

As you all know that recent Cyclone "Vardha" has devastated the entire Chennai, CFTI, Chennai was also not spared. But I am delighted to share with you that we have recovered and restructured the entire campus in a record time. The photographs inside depict the devastation and the recovery.

I am happy to share with you the good news that CFTI, Chennai has bagged the order from Tamilnadu Slum Clearance Board (TNSCB) and CLRI for training the unemployed youth residents of Slum / Slum Clearance board tenements and scheduled caste in the field of Footwear & allied job roles respectively.

It is further to state that this Institute, inspite of Chennai Floods &Vardha cyclone damages, recovered and marching towards many achievements which includes the process of ISO certification by March 2017.

I thank all officials, staffs and students of this Institute for their extended cooperation.

FOOTWEAR EVENTS
(JANUARY 2017 - MARCH 2017)

Jan 14-Jan 17, 2017 Riva del Garda, Italy
Expo Riva Schuh International Shoe Fair

Jan 15-Jan 16, 2017 Manchester, New Hampshire, United States
Boston Shoe Travelers

Jan 15-Jan 18, 2017 São Paulo, Brazil
Couromoda International Shoe, Sporting Goods and Leather Goods Fair

Jan 17-Jan 19, 2017 Berlin, Germany
Premium Berlin International Fashion Trade Show

Jan 24-Jan 27, 2017 Kiev, Ukraine
Leather & Shoes International Fair of Shoes, Leather & Fur

Jan 24-Jan 27, 2017 Moscow, Russian Federation
Mosshoes International exhibition for footwear, bags and accessories

Jan 27-Jan 29, 2017 Lahore , Pakistan
PIFS Pakistan International Footwear Show

Jan 27-Jan 30, 2017 Athens, Greece
Hellenic Shoe Fair

Jan 27-Jan 29, 2017 Lahore, Pakistan
PMLS Pakistan Mega Leather Show

Jan 31-Feb 3, 2017 Chennai, India
India International Leather Fair - 2017

Jan 31-Feb 2, 2017 New York, United States
FFANY - Shoe Show

Feb 2-Feb 5, 2017 Istanbul, Turkey
International Istanbul Yarn Fair

Feb 3-Feb 5, 2017 Madrid, Spain
MOMAD Metropolis Footwear & Leather Fair

Feb 7-Feb 8, 2017 Teaneck, United States
The Children's Great Event Shoe Show

Feb 7-Feb 9, 2017 Düsseldorf, Germany
GDS International Event for Shoes & Accessories

Feb 8-Feb 10, 2017 Bogotá, Colombia
IFLS International Footwear & Leather Show

Feb 11-Feb 13, 2017 Atlanta, United States
The Atlanta Shoe Market

Feb 12-Feb 14, 2017 London, United Kingdom
Pure London Footwear & Fashion

Feb 15-Feb 16, 2017 Danvers, Massachusetts, United States
NE Apparel and Footwear Materials Show

Feb 18-Feb 20, 2017 Brno, Czech Republic
KABO International Footwear and Leatherware Fair

Feb 19-Feb 21, 2017 Birmingham, United Kingdom
Moda Footwear UK

Feb 20-Feb 23, 2017 Las Vegas, United States
Sourcing at Magic Footwear

Feb 21-Feb 23, 2017 Milan, Italy
Lineapelle Leather Exhibition

Feb 21-Feb 23, 2017 Milan, Italy
SIMAC - Tanning-Tech International Exhibition of Machines and Technologies for Footwear and Leathergoods and Tanning Indu

Feb 26-Feb 28, 2017 Toronto, Canada
Toronto Shoe Show

Mar 4-Mar 6, 2017 Offenbach, Germany
ILM International Leathergoods Exhibition

Mar 5-Mar 6, 2017 London, United Kingdom
The Kensington Shoe Event

Mar 14-Mar 16, 2017 Novo Hamburgo, Brazil

FIMEC Leather, Footwear & Machinery Fair

Mar 14-Mar 17, 2017 Leon, Mexico
SAPICA Shoe Fair The Footwear And Leather Goods Show

Mar 14-Mar 17, 2017 Moscow, Russian Federation
Mosshoes International exhibition for footwear, bags and accessories

Source: www.worldfootwear.com

ABOUT THE INSTITUTE

CENTRAL FOOTWEAR TRAINING INSTITUTE (CFTI), Chennai an autonomous Institution under Ministry of Micro Small & Medium Enterprises, Government of India, has been working for development of Human Resources for Footwear & Allied Industries since 1957. The institute was 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. Its premier courses are the Two year Diploma course in "Footwear Design and Production" and 1½ years Post Graduate Higher Diploma course in Footwear technology & Management studies is accredited with Textile Institute, London and Leicester College of Footwear, 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 Manufacturing & Material testing machines.
- Well equipped library with text books, periodicals, journals design magazine, SATRA bulletins & 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 the 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 and Leicester College of Footwear, 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 needs of the Footwear Industries of Ambur, Ranipet & Vellore.

PRESENT TRAINING ACTIVITIES OF 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.

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 2015-2016.

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 **5,166 candidates** on various job roles till September 2016.

Recognition of Prior Learning (RPL)

Recognition of Prior Learning (RPL) is a platform to provide recognition to the informal 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.

Skill Training Program Sponsored by Central Leather Research Institute (CLRI)

In sponsorship with Central Leather Research Institute (CLRI), CFTI - Chennai is imparting Skill training for 100 SC candidates. The following job roles are being imparted such as Stitching Footwear (50 Nos), Sample Maker (30 Nos), and Stitcher - Leather Goods (20 Nos) under Placement orient in the field of Leather Footwear and allied Industries.

Shoe Upper training through Tamilnadu Slum Clearance Board (TNSCB)

CFTI, Chennai conducts shoe upper training for 100 candidates of unemployed youth residing at Slum / Slum clearance board tenements sponsored by TNSCB through TNSDC.

DEVASTATION BY CYCLONE VARDHA AT CFTI




REMARKABLE RECOVERY AFTER VARDHA AT CFTI




Awareness Program on Digital Payments organised by CFTI for MSMEs




Awareness Program on Digital Payments organised by CFTI for Officers, Staff and Students




Awareness Program on Digital Payments
For Officers, Staff and Students







LACE LESS RUNNING SHOES USE BMW CAR TECHNOLOGY

Some of the best cars in the industry are manufactured by BMW. This time, Designworks, a BMW group company, has joined forces with Puma to come up with an inventive running shoe called X-Cat DISC.

"The approach was to look at every aspect of making a shoe and try to reimagine it. Freeing yourself of what is

here now can be an enjoyable and rewarding exercise, typically it also speeds up change", says Adrian van Hooydonk, Senior Vice President BMW Group Design.

BMW Group Design had introduced the BMW GINA Light Visionary Model - a concept car with a seamless fabric outer shell in the year 2008, which consisted of a flexible material stretched over a movable substructure where functions were only enabled when actually needed.

Based on the same concept, X-Cat DISC has an exterior made of flexible, ergonomic and lightweight GINA material, which can be comfortably wrapped around the feet. The original automotive material has been re-engineered to ensure that it is breathable and durable to fit the needs of a shoe. These shoes don't have laces. Instead, it uses rotating discs that pulls internal wires to close and open the shoes. Inspired by interconnecting gears, the sole design provides engineered flexibility and interlinked stability.

X-Cat DISC is available at a price of $135 and is being sold by Puma.

Prasanna S. Rao
Faculty/Expert
Bengaluru

जूते - जूतियों की करें देखबाल

अगर आप अपने पसंदीदा फुटवेयर को लंबे समय तक सुरक्षित रखना चाहते हैं, तो आपको उन्हें ठीक से रखने के अलावा सही तरीके से इस्तेमाल करने व साफ रखने की भी जरूरी है। महिलाओं की फुटवेयर ब्रांड ला ब्रिजा की फैशन सलाहकार डेनिश ने कुछ सुझाया दिए है-

नियमित सफाई: जूते को रैक मं रखने से पहले हमेशा ब्रश से साफ करं। इस्तेमाल के बाद थूल व गंदगी हटाने से धूल के कए चमड़े के सतह में प(वेश नहीं कर पाते हैं।

स्टाइल टिप: हर लड़की के पास होने चाहिए ये 5 तरह के फुटवेयर

सही उत्पाद: जूतों की देखभाल में सही ब्रश और उत्पाद महत्वपूर्ण भूमिका निभाते हैं।

हील केप को बदलें: हील केप या इसके ऊपरी लिफ्ट को दरार पड़ने या पहनने में दिक्कत होने पर बदल दें, क्योंकि खराब हील कैप सें आपको चलने में दिक्कत हो सकती हैं।

पढ़ें: 7 तरह के ट्रिप के लिए 7 तरह के आउटफिट, स्टाइल, फैशन, कंफर्ट सब मिलेगा यहां...

मौसम से बचाव करने वाले स्प्रे: वेदरप्रूफ स्प्रे मौसम में बदलाव होने पर जूतों के लिए एंटीबायोटिक का काम करते हैं। बाजार में कई फुटवेयर स्प्रे मौजूद हैं जो हर किस्म के चमड़े के जूतों की देखभाल किए जा सकते हैं।

2nd Consultative Committee Meeting of CFTI, Chennai



Awareness Program on Product Certification under TEQUP Scheme by MSME-DI


Meeting with Cheyyar SEZ Developers by Director, CFTI at M/s. Cheyyar SEZ Developers, Cheyyar


National Conclave for Faculty Development of Technology Centre at NIMSME Hyderabad

Awareness Programme on ISO Certification



Footwear Fair - “Meet at Agra - 2016"



“Entrepreneurship Day 2016"




Moderation of I & II year students of DFDP by Mr. Peter Rocklyfelt of Leicester College of Footwear, UK,












TOXIC CHEMICALS FOUND IN SCHOOL SHOES

DMF is used as an anti-mould agent in leather goods such as shoes, handbags, clothing and furniture.

What is dimethyl fumarate and where is it found?

Dimethyl fumarate (DMF) is a potent allergenic sensitiser that is used for its antifungal properties. It is good at stopping the growth of mould in finished products such as leather couches and shoes. The white crystalline powder is packaged into small sachets, similar to silica gel sachets used to remove moisture. Whilst silica gel is an inert substance that removes moisture, it is not that effective in preventing mould growth in large leather items, hence the use of DMF sachets.

DMF sachets are found stapled to the wooden frame or directly under the leather covering of couches. They are also placed directly into packaging such as shoe boxes. Although finished leather goods hold very little moisture and, therefore, not prone to mould, the problem arises when transporting these items between different climates. Confined spaces and humid environments can lead to moisture build-up and mould growth. The crystalline DMF powder works to prevent mould growth by evaporating over time. However, during this process it also permeates the leather goods.

Allergy to Dimethyl Fumarate

What are the reactions to dimethyl fumarate allergy?

In DMF allergic individuals, contact with DMF produces classic allergic contact dermatitis. In high enough concentrations it may also cause irritant contact dermatitis. The skin affected by the dermatitis can be severe, red, swollen, scaly and itchy. The rash is often seen on the backs of the legs, buttocks and back of patients who have sat on a DMF-contaminated couch. Hence the condition is commonly known as "sofa dermatitis". Very low levels of DMF (<1ppm2) can trigger a reaction in individuals who are sensitive to the substance. DMF can permeate fabric so areas of skin covered in clothing may also be affected. Continued and repeated exposure to DMF will lead to worsening of symptoms.

Back in 2006-8 there was an outbreak of furniture-related dermatitis in Finland, UK and France. In some cases the rashwas quite severe, resembling mycosis fungoides or septic infections (impetigo), and required hospitalisation. Thorough investigation led to the discovery that all patients had purchased leather furniture prior to developing the dermatitisand all the furniture was traced back to a furniture factory in China whom was using DMF to prevent mould growth.

DMF has also been implicated in foot / shoe dermatitis. In one case the dermatitis started as an acute, sharply demarcated eczema that matched exactly to the contact area of the shoe exposure. The patient had worn a pair of new shoes for approximately 8 hours. The high concentration of DMF produced an irritant contact dermatitis rather than allergic contact dermatiti Allergy to dimethyl fumarate: sofa dermatitis

DMF allergy is diagnosed by performing special allergy tests, i.e. patch tests. Concentrations of 0.001 to 0.1% dimethyl fumarate in petrolatum or aqueous solution can be used for patch testing. However, due to the high risk of irritant reactions and active sensitization caused by DMF some researchers have recommended concentrations of 0.003% or 0.005% as an upper limit. Currently DMF is not included in most baseline series for patch testing and more studies are required to determine the exact concentration of DMF to be used.

The potential toxicity of DMF has received considerable attention.It is not classified as human carcinogen (A4), but it is thought to cause birth defects.In some sectors of industry, women are banned from working with DMF. For many reactions, it can be replaced with dimethyl sulfoxide. Most manufacturers of DMF list 'Life' or 'Chronic' as a health hazard in their MSDS since DMF is not readily disposed of by the body. According to IARC, DMF is not classified as to its carcinogenicity to humans, and the United States Environmental Protection Agency does not consider it a cancer risk

The primary use of DMF is as a solvent with low evaporation rate. DMF is used in the production of acrylic fibers and plastics. It is also used as a solvent in peptide coupling for pharmaceuticals, in the development and production of pesticides, and in the manufacture ofadhesives, synthetic leathers, fibers, films, and surface coatings.

It is contained in sachets in shoe boxes, often imported from China. Currently there is no restriction on importing DMF in Australia; despite warnings issued in other countries that exposure to the chemical has been blamed for health problems including serious burns, dermatitis, and respiratory trouble. The harmful effects came to international public attention in 2008 when the BBC Watchdog program and a British newspaper ran investigative stories revealing numerous cases of hard-to-treat blisters and burns after they had come into contact with DMF sachets placed inside imported Chinese sofas. Victims included a baby from Leeds, Charlie Mather.

DMF... dermatitis 23 days after wearing the shoes containing dimethyl furmarate.

It was discovered that the body heat generated when coming into contact with sofas started a chemical reaction with the DMF, resulting in rashes and burns - some so bad they looked like cigarette burns.

The revelations caused the recall of thousands of sofas and other products and resulted in numerous product liability claims across Britain. The European Commission banned imported products with DMF in 2009, and shoes containing DMF were recalled from France, Spain, Poland and Finland.

A TOXIC chemical banned in Europe for causing serious skin irritations has been discovered in imported children's school shoes sold in Australia.

Tests conducted three months ago by the Council of Textile and Fashion Industries revealed that 25 per cent of the shoes it bought from major retailers contained the toxic chemical DMF (dimethyl fumarate).

The tests follow a 2009 report by the council that showed batches of children's school, sports and casual shoes contained numerous harmful chemicals that have also been banned in other countries.

The council submitted the results to the Australian Competition and Consumer Commission, which is responsible for product safety. But the council's senior adviser, Andreas Shimkus, said the watchdog had been slow to act.

DMF is widely used as an anti-mould agent in leather shoes, handbags, clothing and furniture. But its harmful effects, including serious burns, dermatitis and respiratory problems, were revealed in 2008 by British television and newspaper reports. In one case, a baby suffered a case of blisters and burns after coming into contact with DMF sachets placed inside Chinese sofas.

The revelations caused the recall of thousands of sofas and other products and resulted in numerous product liability claims across Britain.

The European Commission banned imported products with DMF in 2009, and shoes containing the chemical were recalled from countries including France, Spain, Poland and Finland. Now similar sachets are being included in boxes of footwear coming from China.

Dimethyl fumarate - which works by evaporating and being absorbed into a product to stop mould - particularly permeates plastics.

A spokesman for the ACCC said it has not received reports of injuries associated with DMF exposure.

But the textile and fashion industry council has warned that there is no monitoring of chemical levels in imported products .Dimethyl fumarate was declared the Contact Allergen of the Year for 2011 by the American Contact Dermatitis Society (ACDS).

Treatment of dimethyl fumarate allergy

Confirmation of DMF allergy requires the prompt removal of the causative agent and then management as for anyacute dermatitis/eczema; this may include treatment with topical corticosteroids and emollients. In severe cases, patients may be hospitalized and treated with systemic steroids.

How to avoid dimethyl fumarate allergy?

In the European Union, the use of DMF has been banned since 1998. In January 2009, the European regulators also banned the import of products containing DMF as a result of severe cases of dermatitis caused by DMF in imported products. However, in the United States and Australasia there is no regulation of products containing dimethyl fumarate.

Recently in Australia there have been reports of DMF sachets found in imported children's school shoes. Tests performed by the Council of Textile and Fashion Industries showed that 25% of shoes bought from major retailers contained DMF.

If you have sensitivity to DMF you should clearly avoid any contact with products that may have been contaminated with the substance. Sachets labelled "mould inhibitor" or "anti-mould" are likely to contain DMF and should not be touched. Sachets commonly found in shoe boxes or other packaged goods, labelled "silica gel", should be handled with caution as it has been discovered that some of these may contain both silica gel and DMF, but are labelled only as silica gel sachets.

Items such as shoes that have been in a box with DMF sachets should be left for several months in the open air before the level of DMF can be considered harmless. Unfortunately, in some shoes DMF may have been incorporated into the structure of the shoe and the evaporation of DMF to reach safe levels may be years instead of months.

It is difficult to avoid DMF as products are not identified as containing the substance. Patients and doctors need to be aware of DMF allergy if unexplained skin reactions occur, particularly if a new item of furniture or clothing has been purchased recently that coincides with the dermatitis. Your dermatologist may have further specific advice, particularly if you are highly sensitive to DMF.

Alternative names for dimethyl fumarate

- Fumaric acid
- Dimethyl ester
- Allomaleic acid dimethyl ester
- Dimethyl (E)-butenedioate
- Methyl fumarate

More information

Formula: C6H8O4

CAS number: 624-49-7

Cross reactions:

- acrylates and fumaric acid esters

Appearance: fine white crystalline powder

Sensitizer: dimethyl fumarate

Patch test: 0.001 to 0.1% dimethyl fumarate in petrolatum or aqueous solution

Related information

References:

- Hasan T, Zimerson E, Bruze M. Persistent Shoe Dermatitis Caused by Dimethyl Fumarate. ActaDermato-Venereologica 2010, 90, 554-555
- Lammintausta K, Zimerson E, Hasan T, Susitaival P, Winhoven S, Gruvberger B, Beck M, Williams JD, Bruze M. An epidemic of furniture-related dermatitis: searching for a cause. Br J Dermatology 2010;162(1):108-16.
- O'Brien N. School-shoe chemical leaves a nasty footprint. The Age. May 20, 2012
- Rantanen T. The cause of the Chinese sofa/chair dermatitis epidemic is likely to be contact allergy to dimethylfumarate, a novel potent contact sensitizer. Br J Dermatology 2008; 159: 218-221.

An article by **Mrs. Brinda Suresh,**
Faculty, CFTI, Chennai

First Day of 2017 at CFTI

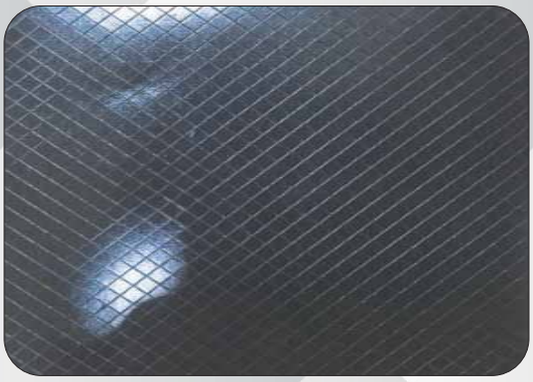
Director's visit to Gandhigram Rural Institute - Deemed University for Consultancy Services

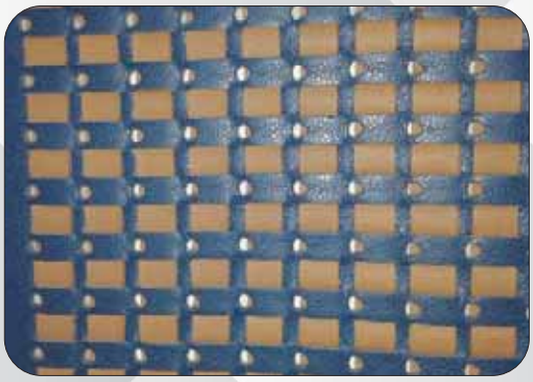
"Rising Kerala Fair" at Calicut

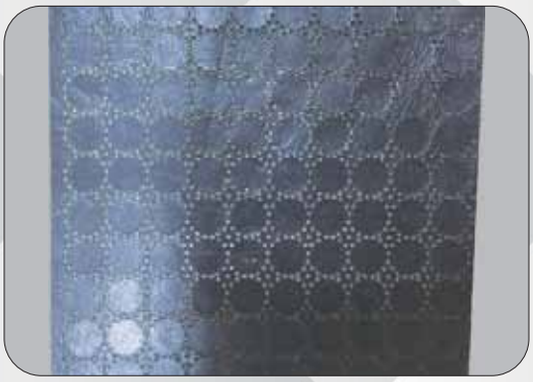
Visit of Shri. Vijay Kumar. G.Srkr, IAS, Vice President & MD, A.P. SC Co-Op Finance Corporation Ltd. alongwith CLRI officials to CFTI, Chennai

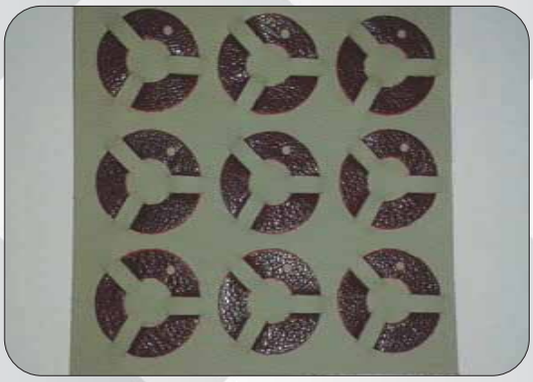
Creation / Innovations by CFTI, Chennai

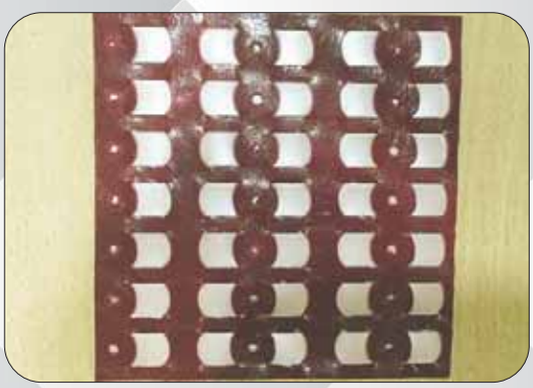
Interlace Design & Interlace Shoe Making

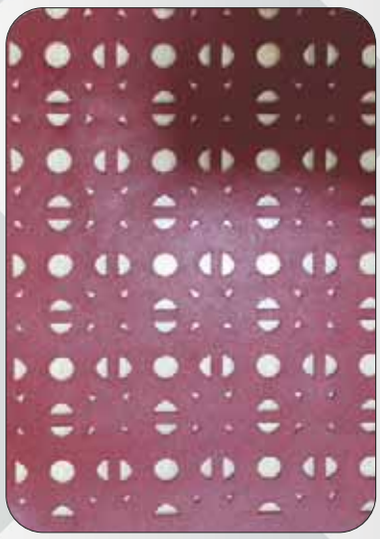












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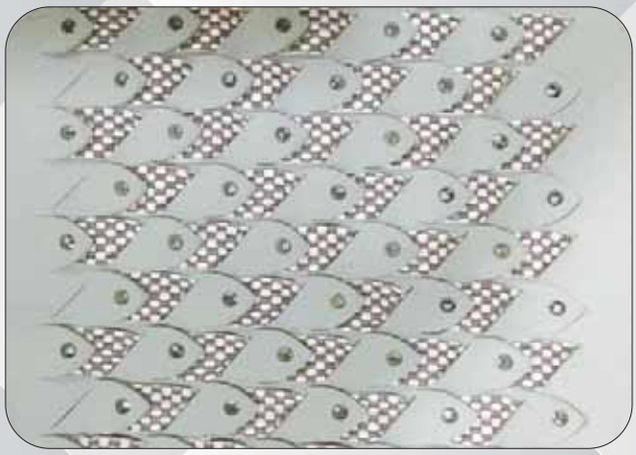
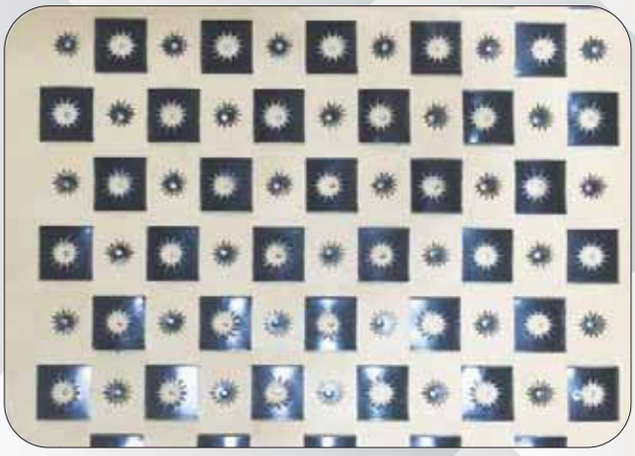
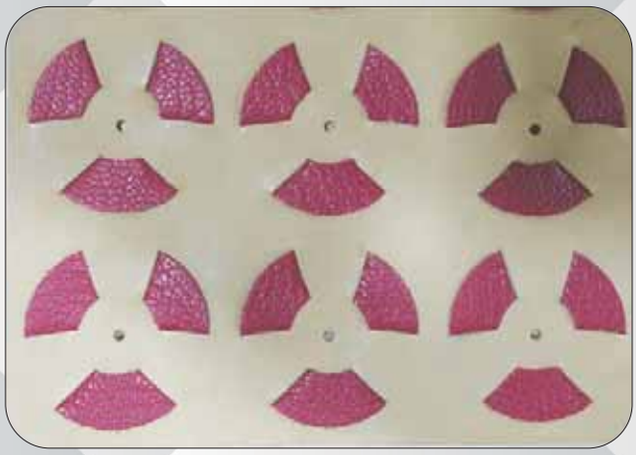
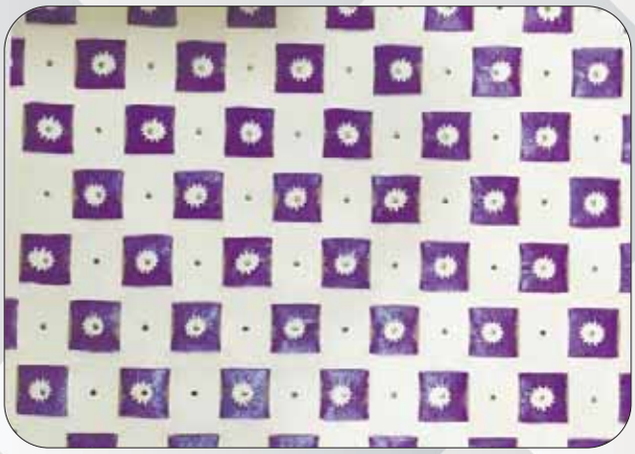
Interlace Design & Interlace Shoe Making









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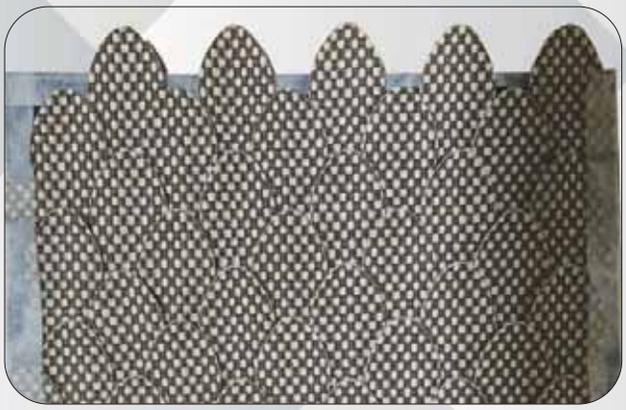
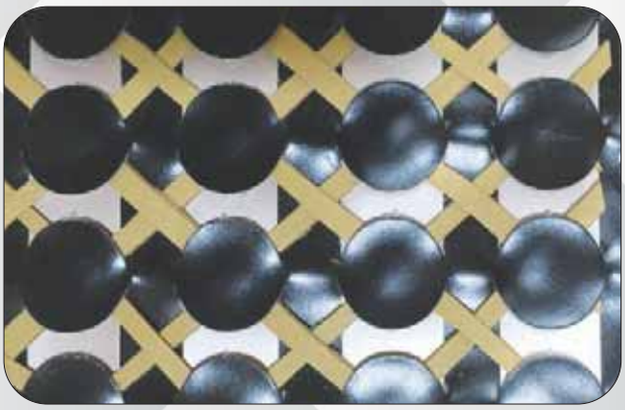
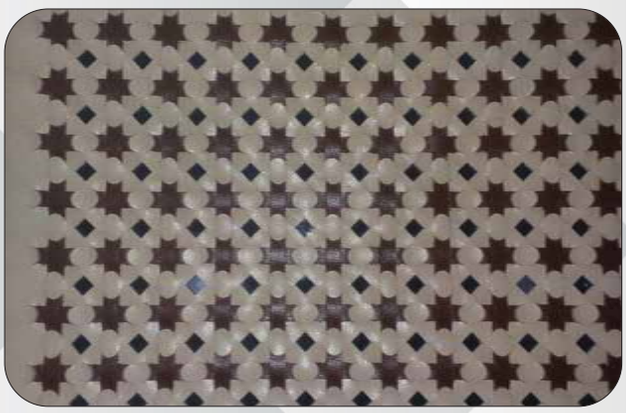
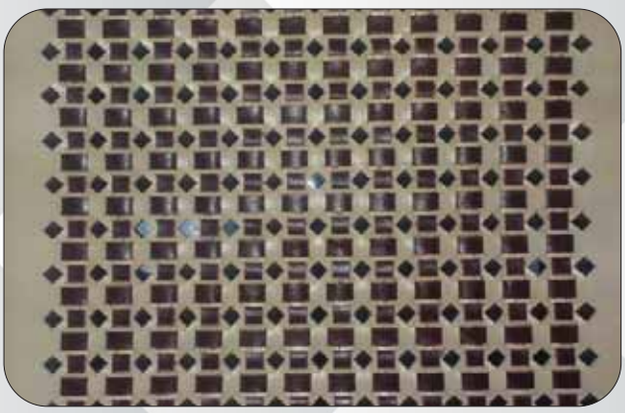
Interlace Design & Interlace Shoe Making





Designs conceived by **Mr. Jaikumar**
Designer, CFTI, Chennai





PERFORMANCE OBJECTIVES IN SHOE MANUFACTURING

The shoe manufacturing industry is highly competitive, which makes meeting performance objectives critical for success. Each shoe company has its own take on footwear but targets many of the same customers. To retain their current market share and grow their operations, shoe manufacturers must perform at their optimum to outdo competitors.

Quality

Keeping shoe defect rates, scrap and other forms of waste at a minimal level is a critical performance objective. Without quality, it is hard to build a positive brand name, retain customers or win new ones. For these reasons, efficiency metrics are closely monitored in shoe production environments. The raw materials and the sophisticated machines used to create footwear are tested on a regular basis to ensure quality. Quality assurance programs are widely utilized in the industry.

Cost

Operating costs impact bottom-line profit and the ability of a shoe manufacturer to continue production. Labor, raw materials and miscellaneous overhead expenses are among the costs monitored by management. If a company cannot use its resources effectively or is constantly having to retool its operations, it is likely to lose ground to its competitors. Keeping manufacturing costs low is a standard performance objective. However, lower costs do not always equate to quality shoes or efficient production.

On-Time Delivery

Cycle times are an important measure of performance and the ability of a company to meet its delivery objectives. Cycle times between process steps and sub systems need to be optimized to remove bottlenecks from production. Otherwise, work can pile up at specific work stations, causing delays throughout the production process. Quality assurance support staff are often used to help managers and line workers reduce idle times and speed up production.

Sustainability

There are CO2 emissions and other harmful side effects associated with shoe production. Without the proper safeguards, manufacturers can pollute the environment and damage the communities in which they operate. For these reasons, sustainability and compliance with government environmental regulations are critical performance objectives. Public opinion can sway against manufacturers that harm the environment, which can hurt sales. Factory audits, employee training and hazardous materials ratings are all elements of sustainability programs.

An article by **Prasanna S. Rao,**
Faculty Expert, Bangalore

PRINCIPLES OF SHOE FITTING FOR THERAPEUTIC FOOTWEAR APPLICATIONS

Principles of Shoe Fitting

A full understanding of the principles of shoe fitting is essential so that the clinician may offer clear and confident advice or guidance about choosing suitable footwear styles, heel height, shape and retaining mechanisms (fastenings).

Examining the patient's existing footwear by looking at creases and wear marks will tell much about foot function, and the choice of style will say quite a lot about the patient's ability to choose suitable footwear. This section examines all the principles of shoe fitting in depth, taking each fitting point and examining its contribution to the overall shoe fit. These fitting principles can be applied to check worn footwear as well as in fitting new retail or prescription items.

1. Overall Length

The overall length of the shoe, boot or sandal is measured from the back of the heel to the longest toe (which may be either the first, second or third toe). This is subdivided into two specific length features: the heel-to-ball measurement and the ball-to-toe length. Beginning with the overall length, the fitter must check that the shoe is long enough to accommodate all the toes and not assume that the first toe (hallux) is the longest. There also needs to be additional space to allow for the elongation which takes place when the foot is loaded with body weight during the stance phase of the gait cycle.

There is no fixed rule for the amount of space required at the end of the toe box, but generally 1 cm (0.5 inch) is considered sufficient. The amount of space available within a shoe can vary with styling and can be affected by the shape and taper of the shoe. This may add extra length to the style and is effectively 'unused' space. Styles that have a very pointed toe come into this category. The length of the lesser toes should also be checked, as these also need extension room and are often compromised in the very pointed toe shaped footwear which may be fashionable. Where prescription/ therapeutic footwear has been fitted, there should certainly be adequate toe width (length and width of the lesser toes) whatever the foot profile presented, because the prescription often has to accommodate a misshapen foot comfortably in the shoe.

In general, the lower the heel height, the more toe extension space is required as the foot tends to move through the full range of tri-plantar motion. Normal pronation may be inhibited when the heel is raised. This includes dorsiflexion, abduction and eversion. If the dorsiflexion is reduced because of an elevated heel height, when it takes place from a more plantarflexedposition, then the other components of tri-planar pronation are also reduced and foot elongation is inhibited. Shoe styles that have low heels, such as laced walking shoes or moccasins, will need to contain slightly more extension room for the foot as they allow the foot to move through its full range of movement. Conversely, the higher the heel height, the less space is required as the foot barely extends, as pronatory motion is inhibited. In these styles, the vamp is cut in such a way that no creases form due to the lack of extension movement of the foot. Therefore, styles such as high-heeled court shoes are very popular as the neat vamp reduces the

visual length of the foot, making it appear smaller. In addition, the shape and the appearance of this style of shoe is retained for longer.

Another feature which will affect foot elongation is ligamentous laxity and hypermobility. A foot which is hypermobile contained within a flat shoe may require a half size added to the length for full extension to reduce damage to the foot - including deformation of the toes, the development of callous and nail trauma.

Children's shoes require specific growth room and that allowance should be made when measuring the correct size. Most children's shoe sizes include extra length for growth within the size measured on the gauge designed for that specific brand of footwear.

2. Heel-To-Ball Length and Flex Angle

The heel-to-ball length is the first subdivision of the overall length measurement and is significant in successful shoe fitting. The joint at the base of the hallux (first metatarsal joint or ball point) must fit to the widest part of the shoe where the shoe is designed to flex across the metatarsal heads from 1-5; sometimes called the 'ball pocket'. Correct positioning will ensure that the foot and shoe bend together. The fitter needs to be proficient at determining the exact position of the ball joint inside the shoe by feeling where the metatarso-phalangeal joint flexes and also by feeling for the position of the fifth metatarsal head across the flex line of the shoe (Figures1 and 2).

The shoe (and last) have been designed to flex on a precise angle across the ball joints (first-fifth meta-tarsals). The flexion angle within the shoe should match the angle between the first and fifth metatar-sal heads of the foot. This is essential to allow the shoe to function correctly from its tread line. It is also essential for the comfort of the wearer. If the ball joint position is too far forward, the shoe flexes further forward than it should and the toes are crowded into the toe box. When too far back, the result is again that the tread is misplaced, often at a point where the shoe cannot flex at all. This causes excessive vamp creasing and discomfort in the foot. On full weight-bearing, the ball of the foot should be positioned in the widest part of the outer sole; at the point immediately distal to the narrowing of the insole into the waist and shank area of the shoe (Fig. 3).

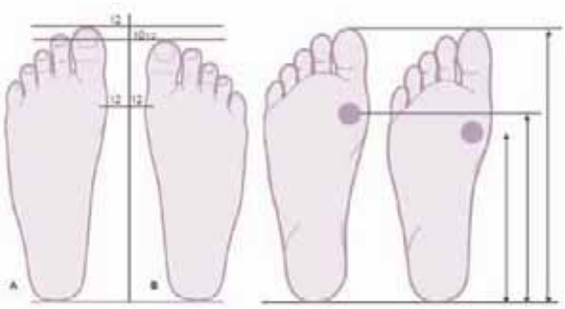


Figure 1: Different overall length feet but same heel-to-ball measurement.

Figure 2: Same overall length feet but different heel-to-ball measurement.

Both the first and fifth metatarsals need to be positioned exactly so that the foot and shoe work in

harmony together. Where this is either too far for-ward or too far back, the shoe may appear to fit over-all but it will never be comfortable, often causing a tiredness when wearing the shoe that is often unexplained because the shoe seems to be long enough in overall length. Where the angle of flexion is unusual, for example in

the case of a short fifth ray, or is compromised, for example where a joint is fixed such as in hallux rigidus, noticeable diagonal creases form across the vamp of the shoe (Fig. 4).

The skill of assessment of heel-to-ball length can-not be emphasized too strongly. It is absolutely essential in determining the good fit of a shoe. If a shoe does not correctly fit both overall length and heel-to-ball length, then the fitter should seek to find a shoe made on a last design which better matches the anatomical features and flexion points of the foot.

3. Ball joint-to-toe length

The ball joint-to-toe length is variable in every foot, therefore the fitter must not assume that if the heel-to-ball length is correct that the toe length is automatically correct. The lengths of toes also vary. They can be short and stubby, average or very long and thin. Where overall length of the toes is either very short or long, it is helpful to try different lasts to achieve the best fit. In time, the skilled observation of foot shapes will enable the practitioner to determine which feet are easily fitted and those that need specialist lasts. Several common foot pathologies, such as hallux valgus and hallux rigidus, can sometimes partly bethe result of a disproportional foot which does not fit the average last proportions. Badly fitting footwear worn over a number of years can lead to trauma to the first metatarso-phalangeal joint. Having satisfied the first fitting points of over-all length and heel-to-ball length, the next check is that the toe length is satisfactory, allowing sufficient extension space to all the toes.

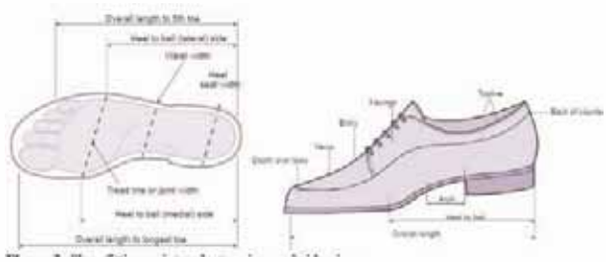


Figure 3: Shoe fitting points: plantar view and side view

4. Heel and seat fit

The fit of the back quarters, top line and heel seat influences not only the fit of the heel, but the fit of the entire shoe, partly because the foot will function differently within a high-heeled shoe to the way in which it will pronate within a low-heeled shoe. This is partly due to the last proportions of the heel area and partly due to the style of the shoe. Ultimately, the aim is to achieve a snug fit around the heel. However, in low-heeled styles, there should be an allowance for the slight movement required by foot pronation (Alpert et al 1998).

When a last is designed, it is thinned down in the region which corresponds to the infra-malleoli area of the foot. This reduction on the last helps to wedge the shoe counter onto the rear foot. The top line around the quarters also has a degree of tightness created by the pattern design and lasting of the upper, and will help the quarters to grip around the heel. These are the most important features in last design which ensure that the shoe is held onto the foot. The back profile of the heel area on the last is paramount in achieving comfort and good grip. It must also reflect the shape of the foot in relation to the chosen height of heel, as this changes when the foot lifts off the ground (Ceeney 1958). The skill of the last designer is essential to achieve a shoe shape which accommodates the changing shape of a

walking foot. The underlying foot anatomy needs to be fully understood in order to achieve this shape (called the back curve). Where this design is not correct, and the fitter fails to identify this when fitting a particularly high-heeled shoe, pressure on the insertion of the Achilles tendon will result, often causing problems such as blisters, heel bumps or deep tissue bursitis(Fig.9).

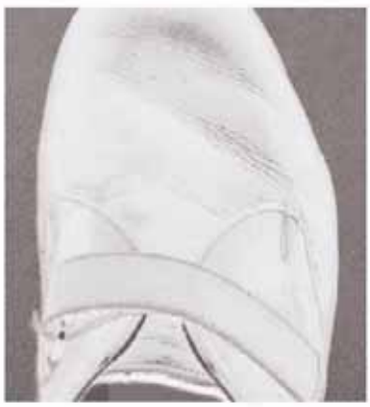


Figure 4: Shoe upper flexion crease caused by hallux rigidus.

The medial (inside) and lateral (outside) malleoli are also prone to irritation from the top of the quarters. In some instances where the heel counter is too deep, the quarters can cut into either the lateral malleolus or the Achilles tendon. As the medial and lateral malleoli are at different heights, better quality footwear will have inside and outside quarters designed differently and the outside quarter will be lower. The quarters are usually curved under the malleoli and grip well, with acceptable pressure on the Achilles tendon. The distance between the top edge of the counter and the heel seat is known as the pocket. This is wherethe heel of the foot locates. The measurements in this area are precise on the last and will vary in accordance with the external heel height, style and size of the shoe. However, if they are not always followed carefully by the manufacturer in the actual making up of the pattern, a faulty back part can result. This can cause heel slippage or excess pressure at the backof the foot. The heel of the foot is a very complex shape, and the 'seat' or width of the plantar surface of the heel

Figure 5: Three right feet, each size 5 in length but different width fittings. Each suits a different style.

Figure 6: Narrow width foot suits a Mary Jane style.

Figure 7: Medium width foot suits Velcro® fastening style.

Figure 8: Wide foot suits a lace style best.

Figure 9: A narrow heel seat causes pressure on the Achilles tendon as the foot forces the counter outwards at the seat and in at the back of the top line.

Needs to be considered as well as the retro-calcaneal profile. The foot should fit

well into the shoe at this point, across the width of the heel seat (see Fig. 5). Where the seat is too narrow, the flesh may bulge up over the counter and it will feel very tight, but the shoe may also be too short or too narrow. Conversely, if the heel fit is too loose, the shoe may be too long or too wide, and where it is too wide in the seat, the shoe is likely to slip off the foot. By palpating thefoot around the counter, it may be possible to pinch the counter in. If this is a noticeable amount, it suggests that the seat is too wide. Alternatively, by gripping the back of the shoe and gently pulling it down, the ease with which it slips off the foot indicates how loose the seat may be. If the shoe has a removable inlay, it is very helpful to place the heel of the foot on it and observe if there is a gap around the foot or if the foot overhangs the sides of the inlay (Fig. 10)

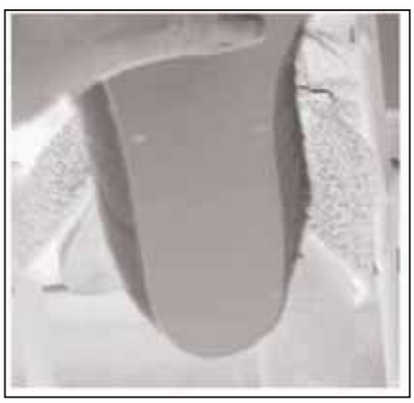


Figure 10: Inlay from narrow heel shoe demonstrates seat width required.

The consequences of poor heel seat width can be significant. Where it is too narrow, for example, the flesh will force the quarters away from the stiffener, exposing the hard ridge of the heel seat. The skin will be irritated by this ridge and eventually form a protective layer of callous. This callous can often become very hard and painful and can damage hosiery. The longer this situation continues, the worse the lesions become.

Another commonly seen problem is the formation of heel bumps. These can be caused when the back top line of the shoe grips into the flesh too firmly, causing irritation which may initially cause blistering but over time will cause damage to deeper tis-sue, resulting in fibrosis, bursae and heel bumps. To avoid discomfort and rubbing, the patient's future choice of footwear is likely to focus on the comfort obtained from backless shoes, or from footwear with very soft unstructured counters.

In the high-heeled, slip-on styles, the heel seat is usually narrow in order to help grip the foot. Where the wearer has a thick-set ankle, or is overweight, the width of the heel of the foot will gradually break down the counter, affecting the fit of the shoe and spoiling its appearance. This will have an effect on gait and the patient will be unstable, particularly where the heel and top piece are very narrow. This can be the cause of falls or trips, particularly in the elderly (Ceeney 1958).

In so many instances, the wearer will declare that a lower heel height cannot be worn, however it is perfectly possible to improve stability by changing the shape of the heel, if not the height. By changing a narrow or tapered heel shape to a block shape, it is possible to increase the surface area by more than twice the amount, improving ground surface contact and stability easily, without insisting on a flat shoe, which in many cases would not be tolerated after a lifetime of wearing heels (Fig. 11).

Where the heel seat is too wide, the shoe is not held securely onto the foot and will slip up and down with every step. This leads to possible irritation of the skin and blisters which eventually harden up;

also the wearer can 'slop about', scuffing the heels along the ground rather than picking the foot and shoe up properly. In addition, there will be a tendency to claw the toes excessively in an effort to grip and keep the shoe on the foot. This toe clawing may become a permanent deformity and can lead to other possible long-term foot disorders (Ceeney 1958). The construction of the back quarters will also affect how the shoe fits to the heel of the foot. Many retail shoe designs have removed the counter stiffener, creating a very soft flexible back to the shoe. This is often found in the cheaper imports, but is also quite common in footwear sold in the high street chain stores.

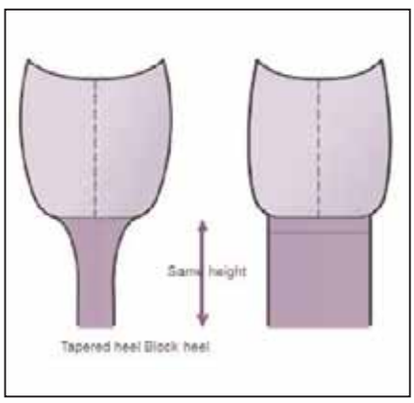


Figure 11: Heels are the same height but different shapes.This demonstrates an increase in ground surface area with a broader heel shape and, therefore, greater stability in walking.

The absence of the counter makes the quarters soft and helps the comfort factor, but in consequence there is a lack of control around the heel of the foot. The soft-backed shoe cannot be held onto the foot as securely as one which is well constructed with firm heel counters.

The same problem occurs in sandals with back straps, and when these are worn for long periods of time, the wearer may become intolerant of a shoe with a normal counter which may then feel too stiff or too hard. Firm heel counters are helpful in controlling heel motion and help to reduce calcaneal eversion and medial tilt. Wearing footwear without these counters can allow certain foot types to pronate excessively and can lead to inversion sprains at the ankle. Optimal foot function is assisted by wearing footwear with firm heel counters, and patients should be advised to ensure that their shoes have firm support in this area.

5. Instep, waist and arch fit

It is helpful to first define these terms, as some con-fusion may arise with terminology.

Instep: refers to the foot within the shoe and encompasses the whole girth of the foot around the 'arch' and onto the dorsum. The natural shape of the foot affects this area considerably in shoe fitting, particularly in cases such as pescavus, pesplanus or in conditions such as Charcot-Marie-Tooth disease and in fixed valgus deformity.

Waist: this is the area of the shoe between the distal portion of the heel seat and the area immediately behind the ball flex point. It is affected by the heel height, and in most well-made footwear is supported by a shank placed between the insole and the outer sole construction. It has both medial and lateral edges that need to be the correct width to support the weight-bearing surfaces of the foot, particularly on the lateral side. The waist is influenced by the width of the heel seat and is proportional to it.

Arch fit: this is the inner undercut area of the waist of the shoe and refers to the fit of the upper mate-rial to the longitudinal arch of the foot as it sits in the shoe (Fig. 12).

These three areas are interdependent, and an under-standing of how to check the fit of the shoe in theseareas, and when to alter the last selection is vital in fitting all styles, but especially so in certain types of footwear such as boots, high-vamp styles without a fastening and loafers.

Figure 12: Relationship between instep of foot and waist of shoe.

The aim is that the foot should fill the volume of the footwear correctly so that there are neither wrinkles, nor torsion creases in the leather of the footwear at the arch or along the lateral side of the quarter. Too much room here will make the fastening ineffective in holding the foot in its correct position; too little can cause compression on the dorsum leading to circulation problems. In boot styles where there is no fastening, the instep fit is vital to comfort and for retaining the foot in the correct internal position within the boot.

The upper material should 'hug' the instep of the foot as snugly as possible when the shoe is correctly fastened. The length of the waist should be the same as the instep of the foot. Where this is not so, it is likely that the heel-to-ball fitting is incorrect. This is another way of checking that essential heel-to-ball fit (Alpert et al 1998).

The height of the instep should correspond to the arch fit and not distort it, and the waist should support the outside/lateral surface of the foot along the fifth metatarsal. The lateral side of the foot should not overhang this edge, nor push the upper out over the outer sole. If it does, then the waist is too narrow and probably the heel seat also, therefore a change to a last of wider rear foot proportions is necessary.

Figure 13: A high-arched foot and facings that are too far apart cause poor fitting of the shoe.

Low instep

Feet with a very low instep or which are hypermobile can cause quite a lot of stress on the shoe arch fit. The use of orthoses to control and support such feet may serve a dual purpose of helping to improve shoe fit and foot function. Trying a selection of shoes made on different lasts will be the best way of obtaining optimal shoe fit, and an adaptation to footwear such as a long inside counter or medial extended heel may also be very useful.

High instep

Shoe fit may also be compromised in feet which are highly arched. In such cases, the foot may not con-tact the waist

of the shoe, the length of the longitudinal arch may be incorrect or the volume may beinsufficient. This will be evident as the facings will fail to meet properly across the fastening of the shoe and will be pulled too far apart (Fig. 13). Generally, the fastening of a shoe will allow a certain amount of latitude in accommodating the girth of the instep and a small space between the facings is always desirable in a Gibson/Blucher style. However the Oxford/Bal styling requires very accurate fitting of the instep as it is stitched at the base of the facings under the vamp and allows little tolerance. The pescavus foot is also affected by external heel height. Such a foot will fail to make adequate contact with the shoe insole of a higher heeled shoe style and may not be held adequately by the quarters, so a change in heel height may also be very helpful.

6. Joint width and vamp

The foot is dynamic and changes in shape during the gait cycle, causing the width and girth to alter continuously. There are three key situations that affect the width across the first to fifth metatarsal joints: non-weight-bearing, weight-bearing including activity, and thermal conditions, for example excessive heat or extreme cold. The average foot will normally expand by about 5% over the course of a day. This amounts to one shoe size in volume. The foot will expand as much as 7-8% after vigorous exercise or during very warm or humid conditions. This is the equivalent of 1.5 shoe sizes. Where a circulatory pathology exists, the foot could expand by 10% during the day, causing considerable pressure inside the shoe by the end of the day. This can often lead to the development of pressure lesions or to injury of the skin and soft tissue if the footwear cuts into the swelling (Rossi & Tennant 1984).

The shoe, although fitted initially non-weight-bearing, must provide adequate width for the foot during activity and for conditions where thermal variation may be a factor. During initial shoe selection, fit during activity is briefly observed by walking around in the store. However this is usually only a token of what the wearer will actually be doing during normal wear, and accurate fitting is a matter of experience and judgment in selecting the shoe width that will best accommodate all of these situations.

The fitter needs to check the tightness of the leather across the vamp, particularly over the joint area, so that it is neither too tight nor too roomy. The width of the foot inside the shoe needs to be checked so that it does not cause the vamp leather to splay out over the width of the outer sole, particularly at the first toe joint, a problem often seen with hallux valgus or tailor's bunion affecting the fifth meta-tarso-phalangeal joint. The most effective way of checking fit is to check the foot dimensions against the shoe inlay. If the shoe does not have a removable one, it is possible to quickly make a template of the inner dimensions of the shoe by placing the shoe on card or paper, drawing around its outline and cut-ting out the shape just within the outline to make a small allowance for seams. Place the foot onto the insole or insole template and then check the match between the foot width and the internal shoe width across the joint area, overall length and toe shape.

Using removable inlays as a fitting aid is quick and effective, as several checks can be made this way. This inlay provides the internal dimension of the shoe and is particularly useful when the wearer has neuropathy and cannot be relied upon to feel the fit of the shoe properly

Adequate knowledge of the patient's medical history will be helpful, as conditions such as neu-ropathy and oedema may cause fitting issues. Where the foot swells diurnally, it may be subject to pres-sure or tightness from the footwear by the end of the day. Where a patient has sensory neuropathy, the shoe may damage the feet without the patient being aware of the trauma.

Finally, subjective factors cannot be ignored and the personal choice on width fitting comfort of the wearer should also be considered; therefore asking the wearer to comment on the comfort of the shoe is essential. It can be problematic when the wearer insists on a loose-fitting shoe or a shoe of excessive length or tightness and is not prepared to be guided by an expert. In these cases, professionalism is paramount to discourage such bad practices. Conscientious retailers will refuse to sell such an item to the customer as they have no wish to deal with potential complaints after the sale. However, this is rare, sadly, partly due to the shortage of such expertise in the retail sector and the need to make sales.

7. Top line Grip

The shoe should fit snugly around the heel and onto the dorsum of the foot at the top line. Variation in styles alters the position and closeness of the top line and there are particular differences between the top line in slip-on styles and lace ups. Excessive gaping of the top line may indicate a faulty fit, and making the shoe on a different last, or in a different style or fitting, may be necessary.

Certain biomechanical anomalies, for example excessive pronation, will also cause gaping of the top line, particularly on the lateral side, whereas conditions such as posterior tibial tendon dysfunction may cause gaping on the medial side of the shoe top line. By correcting the foot position within the shoe with a simple orthotic, it is possible to eliminate the gaping. This is especially the case when fitting the extra depth therapeutic footwear where there will be adequate accommodation for the orthotic. This orthotic will also, of course, help the foot to function more effectively.

The pattern designer's understanding of foot function is paramount to the design of the whole shoe, but in particular to the facings. For example, a lace Gibson style can be designed in several ways and the design may well affect the top line grip.

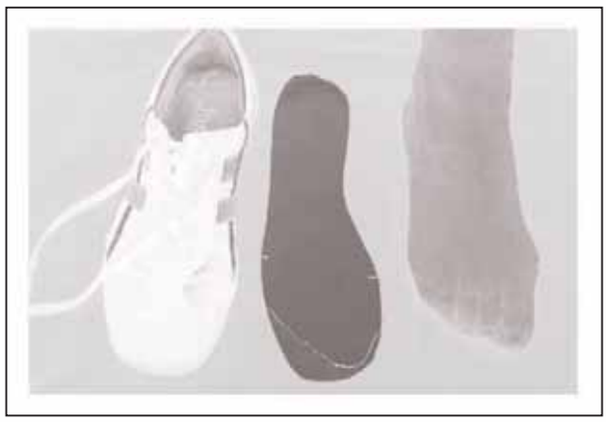


Figure 14: Comparison of a shoe, its inlay and the foot side by side. Checking the inlay under the foot is a helpful fitting tool.

The skill in fitting is to know which shape works with which foot shape, and to choose the correct style of facing for the low-arch foot or the high-arch foot. Bothdesigns can work well when correctly fitted. This is where giving advice about choosing a lace shoe can be confusing, if the shoe fitter has little understanding in the context of varying foot shapes.

Low-heeled shoes do require a minimal amount of open and close bellows style action of the top line as part of the character of the shoe style. This is necessary to accommodate the heel-to-toe action that is more pronounced in a flat shoe than in a high-heeled style. This again highlights the difference in the shod static foot and the shod walking foot and how shoe fit changes with movement. If the correct style of facings has been chosen, the shoe will fit closely when the foot is at rest. With a slip-on style, without the benefit of an adjustable fastening, the fit of the top line must be accurately predesigned into the pattern, otherwise the result is a 'grinning' top line with excess gaping on flexion of the foot. The skill of the designer and trial fitting of new designs are essential here to avoid mass producing a 'faulty fit' style, which fails to fit however skilled the fitter may be.

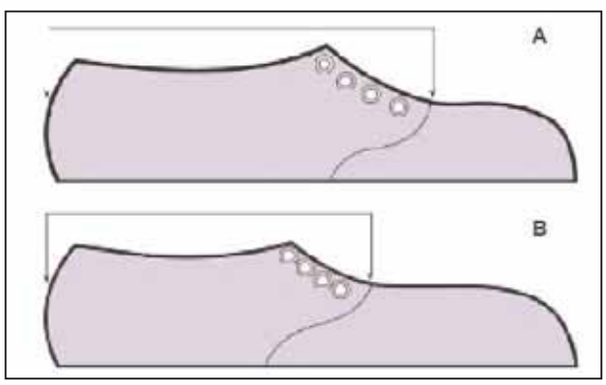


Figure 15: Outline drawings to demonstrate short and long vamp sections.

8. The throat or 'entry'

The throat is the entry point for the foot into the vamp. The position of the entry is determined by the length of the vamp and type of facings. These can be long or short, depending on the style. In low-heeled lace styles, the throat fit deserves particular attention, as it will be altered considerably by the position of the base of the facings, the stay stitching and by particular design variations such as in Oxford and Gibson facings (also known as Bal and Blucher in the USA).

During weight-bearing and walking, the foot extends forwards along the waist and instep of the shoe, so throat room is required to accommodate this extension in addition to the extension room required at the toe end of the shoe. In a low-heeled Oxford or Gibson shoe with the shoe unlaced, the wearer should be able to slide the foot forward inside the shoe and have a space at the back of the shoe sufficient to insert a slim finger or pencil (for adults, 4-6 mm). This gap does not necessarily indicate that the shoe is too big in the heel fit or too long in the length, but should indicate that the room required in the throat is present for comfortable foot function within the shoe. The overall fit can be checked once the fastenings are correctly tied. It is necessary to ensure that the space allows the smallest heel movement, but the subjective view of the fit should also be considered to ensure good foot function.

The clinician should be able to guide the wearer on the finer points of fitting, especially where foot function is already

compromised. The overall aim is to improve or maintain adequate foot function, and the well-fitting and carefully designed shoe should enhance that function.

9. Patterns and styles

Patterns have a tremendous influence on shoe fit, as has become evident in the sections above. This applies especially to the ease of getting the foot into the shoe and keeping it on securely. There are many variations of long and short vamp designs and,generally, the rounder the toe, the shorter the vamp, and conversely the more tapered the toe, the longer the vamp will be. Vamp length is determined by the shoes' overall design especially in the retail industry, but in bespoke footwear, vamp length is determined by the last maker following instructions from the clinician. The clinician will have supplied the outlines and measurements of the foot and will have chosen the shoe style.

As the foot flexes, natural vamp creasing occurs. The toe spring designed into the last will keep this creasing to a minimum. The higher the heel, the less creasing occurs as the flex action required of the foot is reduced by increasing heel height. Choosing the correct style is vital in the clinical situation, especially if severe foot deformity is present, otherwise the shoe may not fit onto the foot

Conclusion

Experience is required to finally establish that the foot-wear is the most appropriate fitting and size for a foot. Whatever size scale is printed inside the footwear, or whatever size is measured on a gauge, there is no substitute for the valuable experience of an expert in shoe fitting who can ensure that the shoe and the foot complement each other in size, form and function.

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An article by
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Tariff for Common Facility Services

Dieless Cutting Machine (Zund Model 2400 - Tariff - Rs. 500 per hour)

PU - Pouring Machine

PU - Pouring Machine 4.8 PUMA James 3 (12 Station - Banana Type - Rs. 1200 per hour)

Design Development at Shoe CAD Centre

Tariff for Design Development 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

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

Tariff for other Common Facility Services

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

Tariff for other 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,

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QUALITY CONTROL & WASTE REDUCTION

Many people are concerned about quality control and it is very important throughout the whole manufacturing process. But quality control is important from the very first step all the way through deliver of the product and even after. Quality control implies quality of the product but is also important in other aspects of the process. Here is some more information about quality control and waste reduction in manufacturing.

Manufacturing is just as much about quality of thought, processes and labor as it is about quality of the final product. Quality control begins with the idea process and it is important that everyone involved try to make the process as efficient and effective as possible. Ideas are very important, but it is equally important to make sure only the best ones actually make it to production. Quality control, sometimes called quality assurance, covers all aspects of the process including design, development, production, delivery, installation and even service. In this broad, overarching sense, quality control is perhaps the most important activity for any company to engage in.

A few specific types of quality control include failure testing and statistical control. Failure testing sounds very simple and the idea is that a product is tested and put through trials until it no longer functions properly. This is especially important with things that are intended to function for very long periods of time like machinery or other production related items. This method is sometimes called stress testing. One great example of this method of quality control is when a shoe company takes their product and puts it in a machine that simulates the bending movement associated with walking to see how long the soles of the shoe will last. This is very important for quality control in general and can point out if there are any weaknesses that could cause the company to incur liability or other expenses related to their product. Statistical control includes other measures to increase efficiency and often implements the ideas of Six Sigma in the whole enterprise and not just the factory.

Waste reduction is another very important concept in the world of manufacturing. The basic theory of quality control states that the less you waste or spill from the cup, the more you have to use or drink later on. Profits are what make a business run and continue production and many companies are concerned with making more profits by cutting expenses. While this is only one aspect of cutting costs, it is a very important one and can often mean the difference between success and failure.

Many people associate lean manufacturing with waste reduction. Lean manufacturing requires cutting out time, labor and wasted materials at every step in the process of manufacturing. Companies can implement this idea into their factory and business to varying degrees, but the idea remains fundamentally the same. Waste less, keep more. Efficiency will make a company more profitable in almost all cases and the few exceptions are probably not in the manufacture of material products, but rather services.

Quality control and waste reduction are mostly associated with the process of actually production but can be applied across all areas of the business. If something doesn't need to be done, then it shouldn't be and could actually cut into the bottom line, which in many cases is the most important thing to a business. Even companies that are very benevolent should consider the necessity of quality control and waste reduction. Every business in the world can benefit from implementing these ideas to some degree in their organization and more than just the quality of the products and services they offer will be improved.

An article by **Prasanna S. Rao**
Faculty Expert, Bangalore

SKILL DEVELOPMENT TRAINING PROGRAM ON LEATHER GOODS MAKING

At Sri Ganapathy Enterprises

TRAINING ON LEATHER GOODS MAKING

CFTI, Chennai imparts custom made training suited to the requirements of the footwear and leather goods making Industries. This is aimed at making the semi-skilled employees of the company by giving specialized training on different skills like cutter, and stitcher etc., related to various leather goods and make them multi skilled. Companies have expressed their deep satisfaction and happiness about the service being rendered by CFTI, Chennai. Also, this institute imparts training to the candidates mobilized by the NGOs and makes them skilled in making various leather goods.

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S.No	Name of the Course	Course Duration	Eligible 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	
LONG TERM COURSES										
1	Diploma in Footwear Design & Production	2 Years	12th Pass	17-25	70,000	30000	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	August/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	August
SHORT TERM COURSES										
1	Advanced Shoe Styling	3 Months	10th	18 to 35	18,000	2,500	N.A	N.A	20,500	Jan,Apr,July & Oct
2	Designing and Pattern Cutting	3 Months	10th	18 to 35	10,000	1,700	N.A	N.A	11,700	Jan,Apr,July & Oct
3	Shoe CAD	1 Month	10th	18 to 35	10,000	1,700	N.A	N.A	11,700	Jan, Mar, May, July, Sept & Nov
4	Shoe Upper Clicking	1 Month	8th	18 to 35	10,000	2,000	N.A	N.A	12,000	Jan, Mar, May, July, Sept & Nov
5	Shoe Upper Closing	3 Months	8th	18 to 35	12,500	2,000	N.A	N.A	14,500	Jan,Apr,July & Oct
6	Lasting, Full Shoe Making & Finishing	3 Months	8th	18 to 35	12,500	2,000	N.A	N.A	14,500	Jan,Apr,July & Oct
7	Leather Goods Making	1 Month	8th	18 to 35	10,000	2,000	N.A	N.A	12,000	Jan, Mar, May, July, Sept & Nov

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.

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@ Palar unit




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SKILL TRAINING

CFTI, Chennai being one of the premier training institutes in the Country, there is a widespread demand from the footwear industries for imparting specialized training to their unskilled and semi-skilled employees and to make them multi-skilled. This institute imparts qualitative and state of the art training in job roles like cutter, and stitcher etc., relating to footwear and other allied products and make them fully skilled. This specialized training has enabled the footwear industries to improve their production. Companies have expressed their deep satisfaction and happiness about the service being rendered by CFTI, Chennai in this regard.

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