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23186

Unido Contract No: 2004/072
Project No: US/KEN/04/078
Purchase Order: 16000624

FINAL REPORT

Foreword

The contract envisaged six broad areas of work:

- Work-package 1 – Provision and updated training syllabi to the institutes (TPCSI and LDC).
- Work-package 2 – Modification and coordination of the training programmes.
- Work-package 3 – Training of trainers to carry out extension services also through the exposure to similar training institutes overseas.
- Work-package 4 – Preparation of specifications for the equipment requirements.
- Work-package 5 – Organise and conduct extension services in selected factories and particularly with micro enterprises (petty cottage and family production) to be used as demonstration models with the aim to develop the relationship of the centre with the informal sector.
- Work-package 6 – Technical assistance to TPCSI to become a service centre.

The work carried out by Pisie has accomplished all the areas mentioned above

About the results

First and second areas

Work-package 1 – Provision and updated training syllabi to the institutes TPCSI and LDC).
Work-package 2 – Modification and coordination of the training programmes.

Pisie carried out two preliminary missions in July 2004 and September 2004 in order to assess the material available and to start preparing the updated one.
As regards TPCSI, after assessing the kind and nature of training carried out in Thika (also in the perspective of a development of the Institute towards stronger relationships with the formal sector and clustering with the informal one), along with the training material available, we decided to work according to the following considerations:

- TPCSI is well equipped with training syllabi, modules and aids, thanks to the support of multilateral organizations (most of all Unido) and of Esalia;
- Training material available covers of the main aspects of footwear manufacturing;
- There is the need to re-structure the available training material within a coherent framework
- The new training material to be produced should be about technology, more than about process;
- The only material about processes to be totally re-structured is the one about design.

Therefore Pisie produced and or delivered to TPCSI the following items (enclosed in Annex I on cd-rom):

a) A multimedia course about footwear design on CD Rom as you yet received with the intermediate report
b) New brochures about footwear technology
c) A new concept of syllabi and modules as regards the stage of cutting and stitching

The latter is justified by the fact that TPCSI carries out a good deal of work in the area of subcontracting of leather uppers: technical training in these areas appears therefore to be of the utmost importance.

All visits developed the impression that TPCSI is a well structured centre with good perspectives of work

As regards LDC, the site visit proved that the centre needs to be re-vitalized. We produced a new outline of training material, as the available one is partially outdated, although the main problem here is that of re-thinking the activities of the centre outlining a strategy for it.

Third area

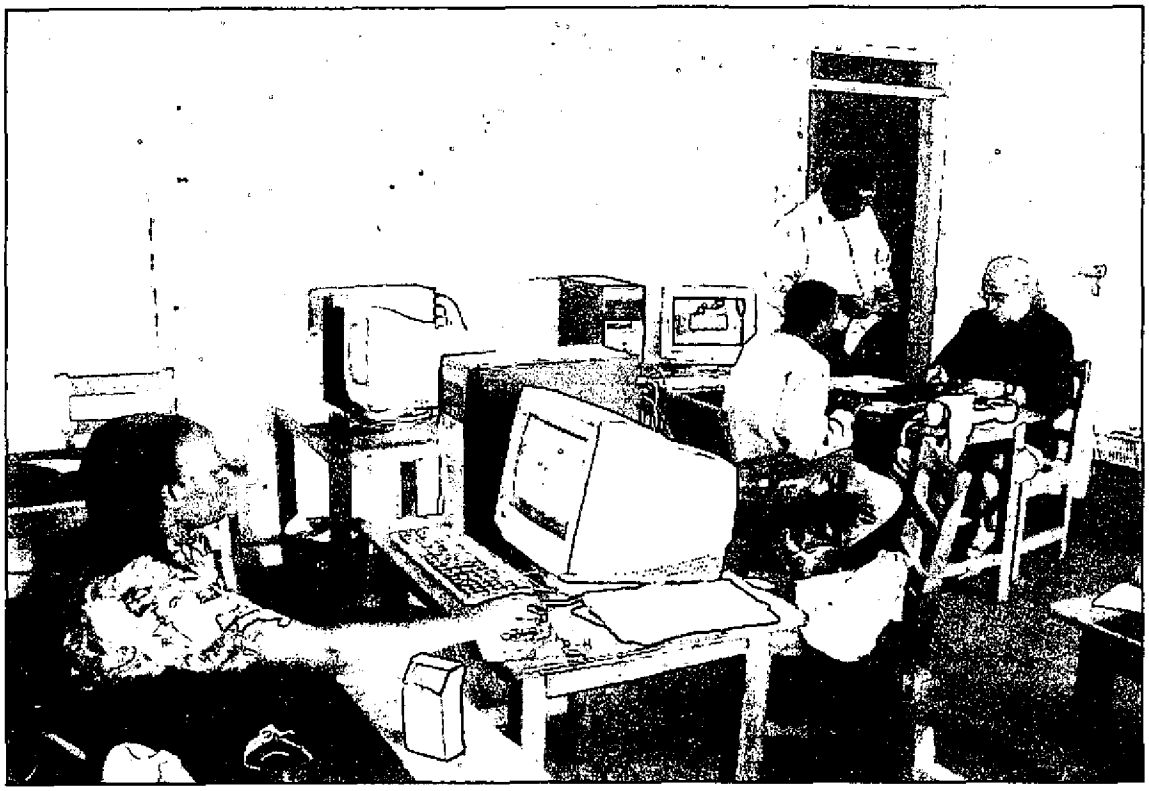
Work-package 3 – Training of trainers to carry out extension services also through the exposure to similar training institutes overseas.

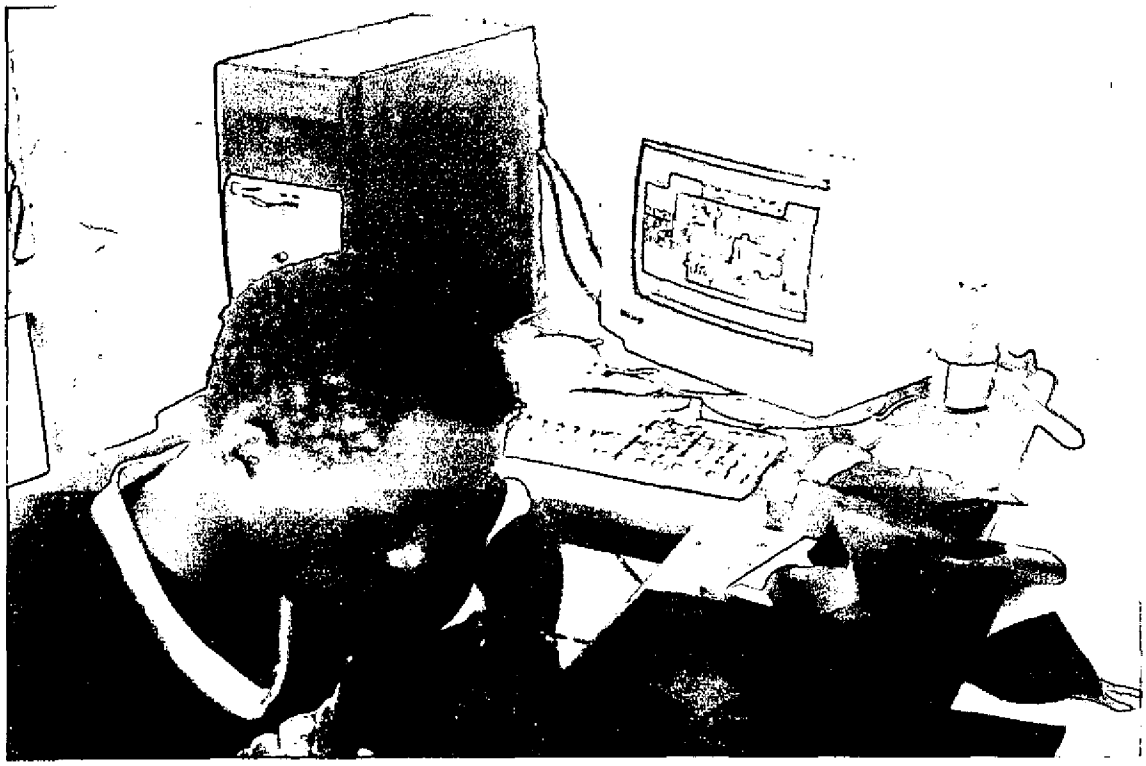
According to the findings of the first missions, and after consultations with Esalia, we decided to focus mainly on the first centre: TPCSI. LDC needs, in fact, to be globally restructured whereas TPCSI is ready to develop new activities (sub-contracting, clustering, new courses). Therefore, we decided to train the trainers of TPCSI on the new methodologies delivering the first and the most complex item of the new training material: the course about footwear design on CD ROM. The second mission to TPCSI was carried out by mr D. Landi, responsible for training of Pisie, along with Mr G. Gadina, footwear designer and trainer, in order to train the trainers of TPCSI on footwear design and manufacturing using the new training material.
It is to be noted that we delivered to TPCSI the following training material:

- Leather goods Technology
- Technology available today for footwear manufacturing
- Pattern making plus 5 cd-rom Kit containing software on training
- Lasting
- Working bottoms
- Cutting,

PISIE

Training at TPCSI





Fourth area

Work-package 4 – Preparation of specifications for the equipment requirements.

The lay out for the new equipment to be used at TPCSI was designed by Mr Sergio Stella, after two preliminary missions carried out by Pisie and aimed at assessing the nature of equipment required to carry out CAD and quality testing and certification. We enclose the new lay outs and list of equipment as annex III.

Fifth and sixth areas of work

Work-package 5 – Organise and conduct extension services in selected factories and particularly with micro enterprises (petty cottage and family production) to be used as demonstration models with the aim to develop the relationship of the centre with the informal sector.
Work-package 6 – Technical assistance to TPCSI to become a service centre.

We decided to manage the activities of these two work-packages together in order to achieve synergies and economies of scale. We defined a sample (opportunity sample, defined with Esalia) of manufacturers to be visited in order to supply them with advice and consultancy and to outline lines of work aimed at networking them with TPCSI (and through the Centre with the formal sector of the economy)
Therefore we proceeded visiting some companies form the industry and a sample of companies form the informal sector. The idea was – in fact – to analyse the possibility to network these two realities in view of a new development strategy for the sector (reference here is made to the *Position Paper for the Industry of Leather in Kenya*, produced by Unido)
It is therefore necessary to supply a working definition for informal sector in order to better understand what we mean with this term and the importance the project attaches to its development. Informal sector is a whole-comprehensive term embracing everything from small scale manufacturing and repair to trade, transport construction and services. This heterogeneity raises a serious definitional question. A wide variety of terms has been adopted: non structured sector, petty production, transitional sector and so on. The criteria normally adopted are based on some of the following points:

- Whether enterprises comply with government regulation (business registration and minimum wage plus taxes);
- Whether they are involved in illegal or illegitimate activities (such as prostitution or crime);
- Size of enterprises;
- Amount of assets and energy use

The first criterion is consistent with the scope of this work and is the one usually adopted along with some indication about the size of enterprise. We refer to the informal sector as the one of enterprises set up and run by self employed persons in open markets, in market stalls, in undeveloped lots, or on street pavements within urban centres, with some extra workers usually employed on a temporary basis. Under this definition, business which are household based or have more permanent premises and employ steadily more than 10 extra workers, are excluded.

As regards its importance for the economy of the country, ILO in 2002 estimated that the sector as a whole accounts for the 36% of the total employment in the country[1].

On the other hand, we have the formal sector, which is thorough-fully analysed in the Position Paper of the Industry of Leather and is hindered by factors such as:

- Competition from second hand shoes
- Competition form cheap imports
- High production costs
- Inefficient processes

Therefore, we carried out a diagnostic of a sample of formal companies and of petty cottage manufacturers at Thika and in the area of Kariobangi (Nairobi) during two missions. The main findings that were:

- Micro-manufacturing in general seems to be reality with a good potential in terms of poverty alleviation and income generation.
- Leather products are one of the productions of the so called Jua Kali or informal sector of Kenya;
- Leather products have to face in the domestic market the competition of second hand items imported massively and of Asian cheap imports;
- Raw material is obtained purchasing rejects of local tanneries or second hand items
- There is the availability of other non leather materials also recycled ones;
- The formal sector is willing to develop the informal one in order to farm out productions (subcontracting)
- There is a market for petty cottage manufacturers in the segment of local residents but also in the segment of international tourism
- There is the need to outline a project concept for the development of the informal sector

All these elements have been brought together within the framework of an activity aimed at developing the relationship of the informal sector with TPCSI, seen as a networking agent with the formal one.

This activity envisaged the design and preparation of a second session of training and services at TPCSI, in order to involve several Jua Kalis and to start testing a new way of work for TPCSI in this sector

The training material was revised in order to meet the requirements of micro-manufacturers and an international expert in design and production, who had already participated in the previous stages of work, was sent to Thika. Several Jua Kali were approached and invited to participate, although it was difficult to bring them to TPCSI. Jua Kali manufacturers, in fact, work in stall along the roads and are not able to leave their workplace for prolonged periods of time, even to enrol training activities. Nevertheless training is perceived by the Jua Kalis interviewed or visited as a way to develop their own capacities. This meant that we had to further revise the intervention, i.e. to totally restructure training, envisaging short periods of absence from the work and defining some amount of money to be paid to each trainee as a wage support (when they undergo training they don't work and don't earn anything) in case TPCSI is able to organise such training. The latter point erquired some investigation. How much ought to be this wage support?

[1] ILO (2002), Decent Work and the Informal Economy, ILO, Geneva

In order to answer this question we had to take into consideration the levels of income among Jua Kalis. As regards that, the Economist Intelligence Unit reports (Kenya Report 2004) that roughly the 53% of the population of the country lives with barely 1 USD a day. The income of a Jua Kali manufacturer should not be much higher, considering that they live and work in some of poorest areas of the country. We suggested TPCSI to offer something in between 2 and 4 USD as a wage support.

All these considerations and the technical assistance supplied by our experts allowed TPCSI to stage a training course for micro-manufacturers[2] which was attended by 15 subjects, out of which 8 came from the slum of Korogocho, one of the poorest areas of the country (it is in the outskirts of Nairobi). The Report about this mission is enclose as annex II.

This course saw also the beginning of collaboration (again promoted by the staff of Pisie) between some social workers and missionaries engaged in the slum mentioned above and TPCSI, setting a new model of work for the involvement of the micro or informal sector in the economic life of the country.
TPCSI is now ready to play its role of bridge between formal and informal sector in the sector of leather productions. Notwithstanding, that would require to re-structure its productive workshop in order to meet this challenge. This means re-shaping the lay out of the equipment as well as the training programmes, As regards the equipment we are suggesting to revise the lay out of present machinery in order to define a section totally devoted to micro-manufacturers. The key elements of this section would be:

- UPPER SKIVING MACHINE
- SEWING MACHINE
- MECHANICAL MACHINE FOR MANUAL LASTING
- PNEUMATIC PRESS WITH BOXES TO PRESS SOLE TO LASTED SHOE
- COMBINED MACHINE FOR DIFFERENT OPERATIONS (lasted shoe bottom roughing, sole edge and heel scouring, sole roughing, leather sole buffing, finished product brushing and polishing, sole edge and heel trimming)

TPCSI already owns the following pieces of equipment:

- UPPER EDGE SKIVING MACHINE
- MACHINE FOR DIFFERENT OPERATIONS
- UPPER SEWING MACHINE
- LASTING MANUAL MECHANICAL MACHINE

The only missing machine is:

- PNEUMATIC PRESS WITH BOXES

Luckily TPCSI, owns also a "first mechanization" lasting machine. This is a good example of equipment suitable for micro-manufacturing. Brand and country of origin of such machine is the following:

GEPGYARTO ES SZOLGALTATO KFT
9700 SZOMBATHELY
SZABADSAGHARCOS U. 9-12
HUNGARY
MODEL SG-209

[2] The training course was carried out outside the activities of this contract by TPCSI. The course was however managed following the advice of Pisie.

This re-shaping and re-structuring of the centre would be particularly important to allow TPCSI to work both for the formal and the informal sector. As already said the role of TPCSI should be that promoting the birth of new micro-activities and to networking them with the formal sector.

Eventually we also developed a new training module for Jua Kalis: a course of basic design and production of footwear which is totally made by images and short video recordings.
This, in order to enable people whose literacy rate is very low to get the most out of the training material available at the Centre.

Conclusions and recommendations

TPCSI seems to be a service centre with good perspectives of development, whereas LDC needs to be re-structured. Both institutes are to be developed in view of a stronger work on clustering and on the development of the informal sector. They should become support structures with different roles:

- Training
- Productive services
- Quality testing and certification
- CAD

The two latter are more focused on TPCSI, which is the centre more similar to the international model of a service structure. The last stage of the work to be carried out within this sub-contract should be used to strengthen the capacities of TPCSI. Therefore, we strongly recommend to shift the focus of this work exclusively on the most promising centre: TPCSI. The process of building its capacities could be greatly enhanced by this, with important results in terms of development of new activities and areas of work. Another suggestion is that the work undertaken with informal manufacturers is not stopped, but carried forward through further training for Jua Kalis and technical assistance for the centre.

ANNEX II

PISTE

FOOTWEAR TRAINING COURSE FOR JUAKALI
19/02/05 - 02/03/05

Realization of a training course for footwear patter-making destined to Juakali (local craftsmen)

First of all, it is to say that Juakali are very-low-level craftsmen; therefore, I spent the first two days (February, 21st and 22nd) organizing a special course with TCPSI (Thika) trainers, considering only patterns Juakali are supposed to be interested to.
Of course I provided for examining Juakali reality in Thika.
The outcome of my visit was that their working system is very rudimentary as well as empirical, lacking in equipment excepting for a flat-bed sewing machine; all processes are manually made.
I actually realized that the produced patterns are only 4:

- One derby footwear for man
- One "Safari Boot" (ankle boot), Clark type
- One man and woman sandal, easily crafted
- One court shoe for woman, short heel; flattie type.

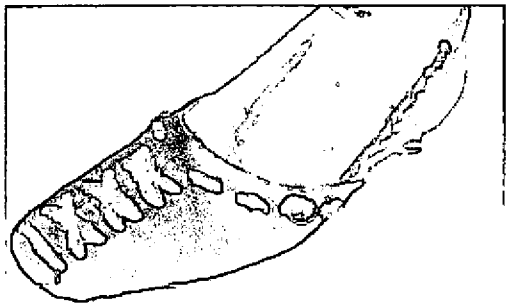
As said before, I provided for a simplification of the course, selecting training as much as possible because I had understood that Juakali, being directly involved in their job, won't have time enough to take part to the course itself.
That's what precisely happened on the first day: only two of the three selected people attended the lesson, one of whom giving up quite immediately.
Taking advantage of their presence, I made them fill in an informative and cognitive card about their working reality (see attached). I therefore began the training course with the only person attending the lesson for about two hours (he couldn't stay longer) and I realized that situation was more complicated than I expected, for the following reasons:

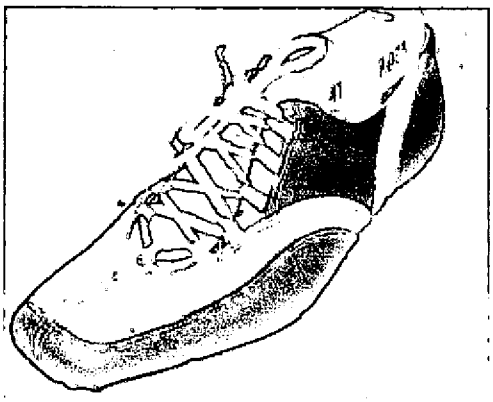
- Time Juakali can devote to training course is however very limited
- Interest is scarce. They seem to have the impression of losing their time or it could be a kind of shyness or mistrust
- Schooling and preparation level are very low, problems in reading and in writing, scarce or inexistent knowledge of English, difficulty in understanding what a 90° angle is or what a parallel or a perpendicular line is.

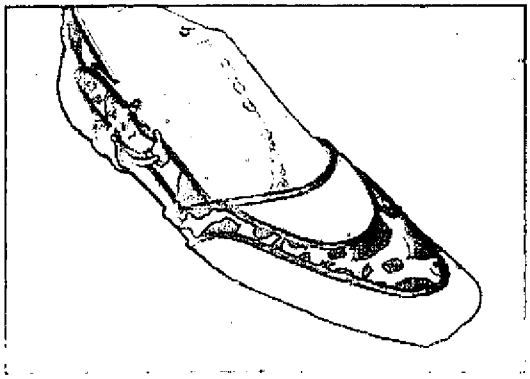
Although having reduced the course to the above mentioned patterns, "Safari Boot" and court shoe with short heel not included in P.I.S.I.E Cd Rom, I realized that the theoretical part, even reduced and simplified at the most, was completely useless and difficult to be comprehended.

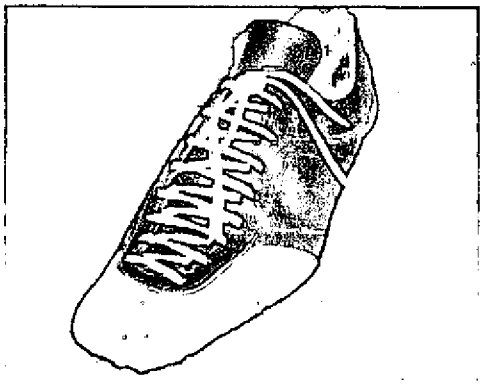
To demonstrate Juakali scarce interest, in the following days nobody attended the course, although I spent my time there up to the first day of March.
There should be other interpretations for the missed participation to the training course: maybe a hurried choice, maybe an inadequate selection. However, I refer evaluations about this matter to other people, not being acquainted with the real situation.
In this period, however, craftsmen seem to be particularly busy, in view of current season (Dry Season); but it was not possible for me to clarify the matter.
I talked with Mr George Kamau, TPCSI Director, who agreed about the difficulties of obtaining Juakali attention. I made Mr Kamau notice that, besides problems linked to time, there are also problems of Juakali training and of their belief of doing the right thing in working as they know. That is to say taking patterns dismantling existing shoes and manufacturing patterns through the *only system they know: the empiric one.*
I made Mr Kamau notice as well that, if Juakali from Thika don't come to TPCSI, it is hard to imagine Juakali from Nairobi coming there, because of evident problems of transport and definitely longer times.
Considering Juakali condition, I submit Mr Kamau the opportunity of thinking to a special training course of two hours per pattern, not particularly personalized, and a possible timetable, for example early in the morning, at lunch or in the evening after working hours, not to interrupt working rhythm.
Always considering problems of time and transport, I submit Mr Kamau the opportunity of locating a venue in Nairobi to attend the course: it is exactly easier to send one or two trainers to Nairobi than make Juakali move from Nairobi to Thika.
I realized it would be advisable to set up an appropriate course for Juakali, two hours long, based for the 90% on a practical part; I reckon practical part to be the most interesting thing for them, avoiding basic theoretical notions, not belonging to Juakali at all.
It would solve a problem of time dedicated to the course and would bring a part of Juakali to deepen notions, not only from "realization" point of view but also from "technological" one, that is to say that TPCSI may realize an "average" lab to be used as a demonstration and as a technical support for craftsmen themselves, suitably equipped.
As for what concerns the special and specific training course, two years long per pattern and that I would call "Take it easy", I'm going to prepare as soon as possible an accomplishing proposal.
Finally, to complete my mission and not being able to finish my training course, I provided for deepening TPCSI training notions, making them fulfil new patterns with good results (see enclosed pictures).

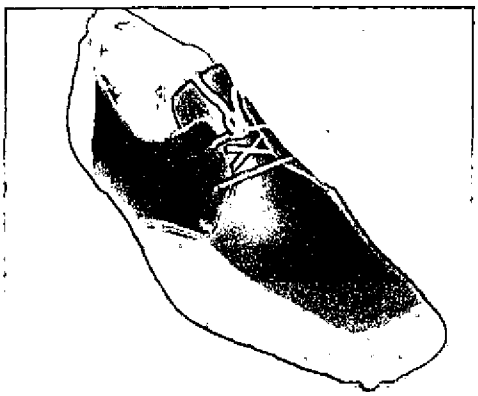
Prototypes photos made by TPCSI trainers

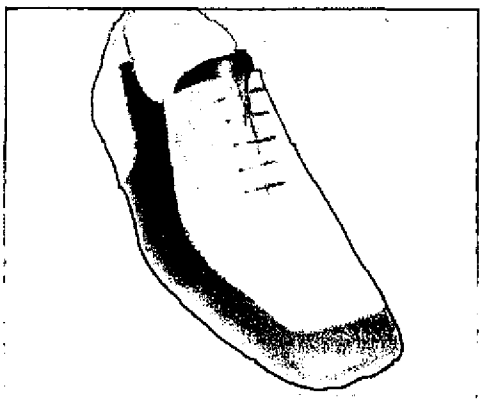


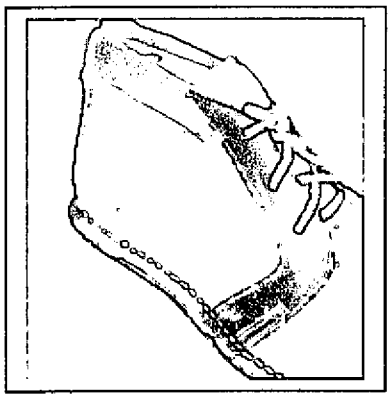


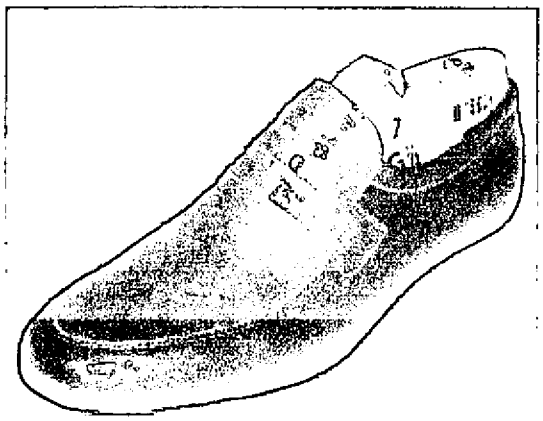












Annex III

Lay outs and list of equipment

Shoe Laboratory Equipment

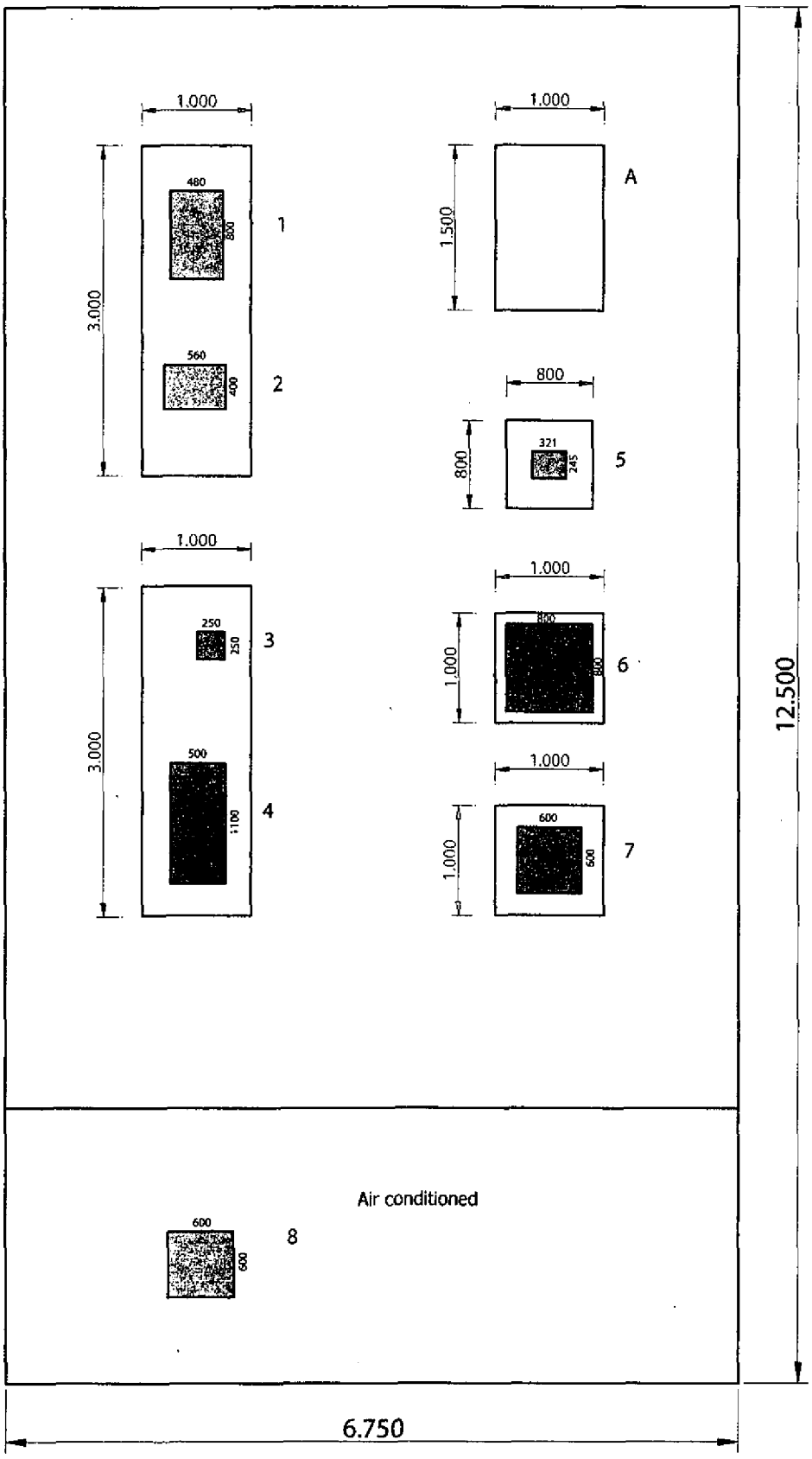
KENYA

POLITECNICO INTERNAZIONALE PER LO SVILUPPO INDUSTRIALE ED ECONOMICO

by Sergio Stella

SHOE LABORATORY EQUIPMENT

Total area: 84 sqm



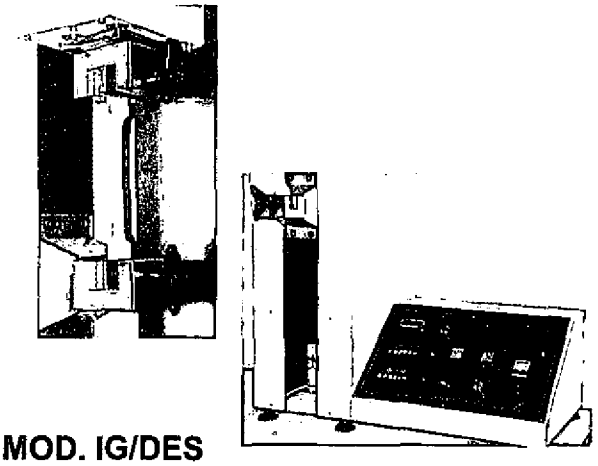
1. **ELECTRONC TENSILE TESTER with load cell class A certified TUV with digital display with pick hold and set min. and max.**

ACCESSORIES:
Windows compatible management software for the load curve determination.

IG/DESWIN

STITCH TEAR RESISTANCE DEVICE to be adopted with Dinamometer

IG/DE/CU



MOD. IG/DES

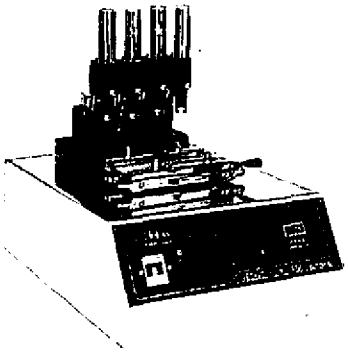
2. **FINISH RUB FASTNESS TESTER IUF/450 (except modifies) VESLIC type stainless steel with n° 4 working stations**

STANDARDIZED FELTS (white)
1000 pieces pack

IG/10/MOD

STANDARDIZED GREY SCALE ISO 105-A03

IG/10/MOD



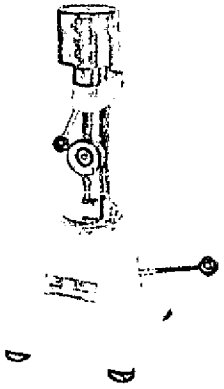
MOD. IG/10/MOD

3. **SHORE HARDNESS TESTER STAND suitable to hardness testing A-C-D.**
Specifications:
UNI 4916 – ISO 48-1400 – ISO 868 – ASTM D 2240 – DIN 53505 – BS 903°26

SHORE A – HARDNESS TESTER
IG/DSA

SHORE A – HARDNESS TESTER
IG/DSD

Supplementary Weight for SHORE D HARDNESS TESTER
IG/DS/DPS



MOD. IG/DS

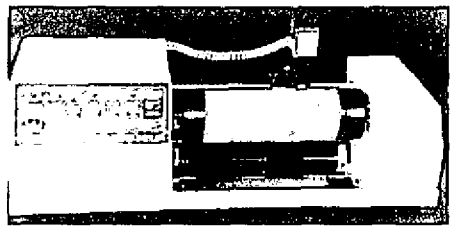
4. **TEST ABRASION RESISTANCE WITH ROTATING CYLINDRICAL DRUM DEVICE according to ISO 4696 – UNI 8615 – DIN 53.516 – BS 903 (except modifies) for test on rubber, elastomers and similar.**

ABRASIVE PAPER TO TEST ABRASION RESISTANCE DIN 53516. Each sheet
IG/ABR/DIN

BIADHESIVE TAPE TO TEST ABRASION RESISTANCE DIN 53516. Each roll
IG/ABR/DIN

STANDARD COMPOUND TEST ABRASION RESISTANCE DIN 53516. Each 90°90 mm.
IG/ABR/DIN

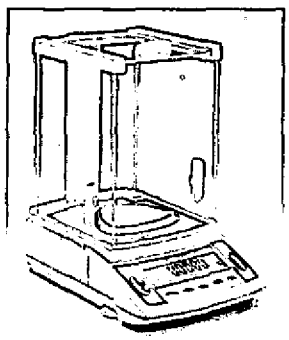
CUTTING TOOL for abrasion resistance – Hollow Drill 4EN 344 – 4.84)
IG/ABR/DIN



MOD. IG/DS

5. **ELECTRONIC ANALOGICAL SCALES**

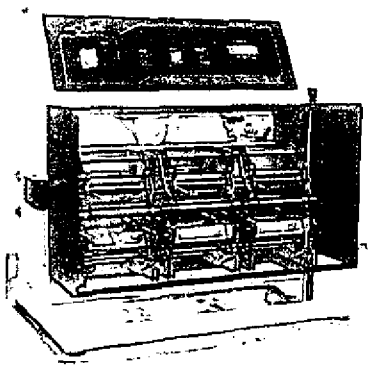
Weighting range: 0 – 320 g.
Readability: 0.1 mg
Bearing table: antivibrating type



MOD. CP3245-OCE

6. **WHOLE SOLE FLEXING MACHINES EN 344 stainless steel 18/8**

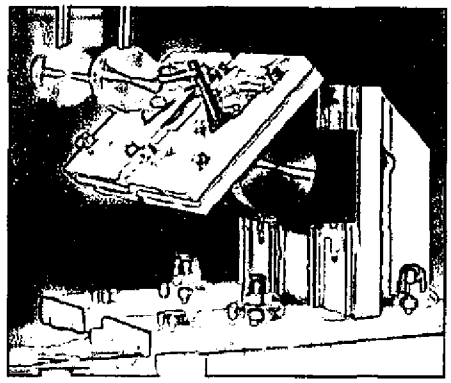
Standardized punch for EN 344 SOLES FLEXOMETER.
IG/BEWRT Punz.



MOD. IG/BEWRT

7. **HEEL FATIGUE RESISTANCE TESTER in accordance to BS 5131 sez. 4.9 (except modifies) complete of:**

Stainless steel Cabinet
Sloping Heel support system
Vertical/Horizontal heel adjustment device
Stainless steel impact hammer
Hammer movement engine reducer
Automatic release system

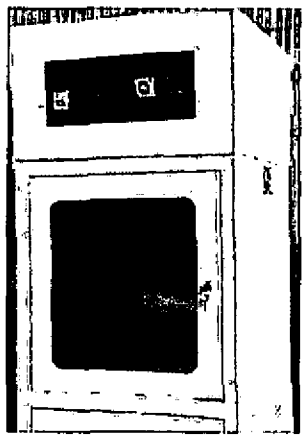


MOD. IG/HFT

8. **COLOURFASTNESS – Lamp to test accelerated ageing by artificial light. Giuliani model for manufactured articles. Specifications: UNI 7095 – UNI – ISO 4582 – UNI ISO 4892 – UNI 7097 – IUF/402 (except modifies)**

Normalized BLUE SCALE
(50 pieces min. pack.)
LIFA /400

Normalized GREY SCALE ISO 105-A02 each
LIFA/400



MOD. LIFA 400

A. VARIOUS SERVICES TABLE