



# **Integrating Companies in a Sustainable Apprenticeship System**

Project 2017-1-DE02-KA202-004174

## **Intellectual Output 3**

# **Train-the-Trainer Manual**

## **– Finishing –**

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Version: Final



This project has been funded with support from the European Commission.

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## 1. Introduction

### 1.1. Aims of the ICSAS Project

The aims of the Erasmus+ project «Integrating Companies in a Sustainable Apprenticeship System» are to

- induce the existing Vocational Education and Training (VET) systems to train skilled workers for footwear manufacturing in Romania and Portugal to develop towards work-based learning (WBL) and improve the sector-specific tutor training in Spain and Germany
- develop a sector qualification framework and the referencing of national qualifications of Germany, Portugal, Romania, and Spain.

### 1.2. Eleven Manuals to Guide In-Company Tutors

Within this project, the project consortium has committed to editing eleven manuals which are intended to prepare in-company tutors and provide support for the work-based learning phases of the apprenticeship.

The workplace-specific know-how will be imparted by skilled workers from this department. They will take on the role of in-house workplace instructors/trainers.

- demonstrating the operations which the apprentices are supposed to learn to perform
- guiding and supervising the apprentices during their first approaches as their skills are becoming more and more advanced
- leading them towards an independent performance of the task

Furthermore, each company enrolled in work-based learning will appoint a Head of Training who is responsible for

- planning of the order of the overall training of each apprentice (how long each apprentice will be trained at each learning station and in which order)
- assessing and documenting the learning progress of each student at each learning station

The chapters of this document are not meant to replace a textbook. They are meant to provide support to the trainers to plan the work-based learning activities with the trainees. The workplace trainers are invited to gather more information from other sources.

### 1.3. Take Your Apprentices on a Guided Tour

Before you start the hands-on training in a specific department, please make sure that the apprentice has been given a tour of the entire company including all departments.

For example, you could start with presenting the types of products your company manufactures and their intended use, the different customer segments, the distribution channels etc. Allow the apprentices insight into the product creation and manufacturing

processes, i.e. product design, pattern making, purchasing department, production planning, and all production departments to warehouse and logistics.

Present some shoe models your company produces (as in Fig 1). Your trainees will better understand the complexity of the product “shoe.



*Fig. 1: Views of shoe parts like on this photo can be very helpful for the trainee to understand the complexity of a shoe*

## 2. Finishing in Footwear Manufacturing

Finishing is done with the aim of ensuring the best treatment on the surface of the shoe, improving the visual appearance of the product and making it more attractive, both visually and to the touch. If through the finishing operations the product becomes more beautiful, attractive and with a softer touch, we can get the difference that makes selling the product.

There are several ways of finishing. The various types of finishing depend mainly on the type of leather used, the desired final appearance and the model configuration.

The same model may even have different finishes, depending on the type of leather used, thus giving rise to a variety of Finishing Types.

## 3. Finish Products

The main types of finishing used in footwear are:

- waxy,
- oily,
- casein,
- polished,
- plasticized.

Waxy finish is the type of finish that requires more processes, because in this case the leather is more absorbent and raw, as for example aniline and semi-aniline, and as they are not finished in tanning factory, require a final finishing in the shoe factory.



Oily finish is associated mainly with calf skin, where oil is applied during manufacture.



Polished finish is normally associated with the purpose of shoe antiquing (or darkening certain areas of the leather) to allow a newer shoe to have the character of an older shoe without the wear.

Typically, this is seen around the toe box and the sides of the vamp.



Plasticized finish is associated with patent leathers that have a surface coating of PVC or polyurethane to give a very high gloss finish. The treatment is used for high fashion footwear but has the disadvantage of reducing the ability of leather to breathe and release perspiration.



Every finish type is associated with a particular set of standard tasks, some of which are common to various types of finish.

The operations common to all types of finishing will be presented, as well as the operations that differentiate them.



## 4. Finishing Department

### 4.1. Insock Fitting

This operation consists of placing and/or gluing the insock.

Nowadays preformed insocks are used, which are only inserted inside the shoe, and there is no need to glue to fix the insock.

This type of insocks is used mainly in sports or casual footwear.



For gluing the insock there are several processes used, namely:

- Mechanical glue application: the glue is applied onto the insock by means of a machine with a glue roller, where the insock passes before an operator inserts it into the shoe,
- Manual glue application: An operator applies the glue with a brush on the back of the of the insock and then fits it into the shoe.

### 4.2. Edge Inking

This operation is performed when upper leather edges (open edges) are visible and do not have the color of the upper leather (for leather which has not been through-dyed), or when the lining edge is visible.

In these cases, it is necessary to dye the edges in the hue of the upper leather.



### 4.3. Cleaning / Repair

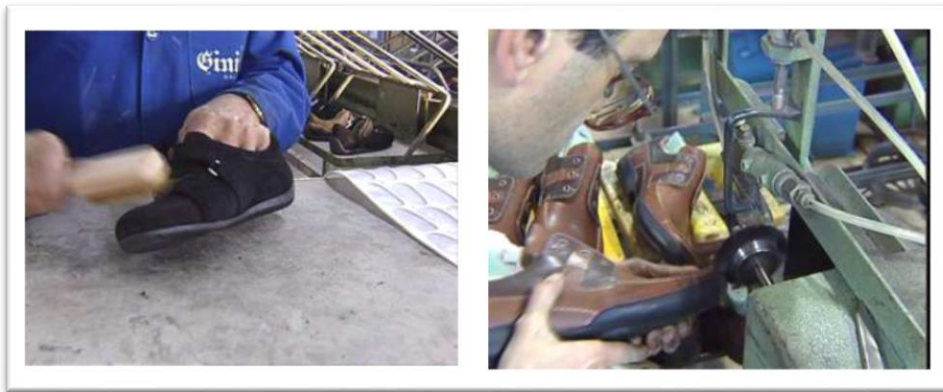
At this stage the shoe is checked and cleaned, which consists of removing glue residues, which can be found in the area where the sole is joined to the upper and inside the upper.

Various tools, equipment and products can be used for cleaning.

The type of cleaning to be performed depends on the shoe materials.

To remove the glue from the assembling edge, the glue cleaning machine can be used.

For the materials in which this process cannot be used, use a rubber crepe, a wooden spatula, a water sandpaper or a flannel cloth soaked in a suitable cleaning liquid.



### 4.4. Burning Thread Ends

With this operation it is intended to eliminate the small thread ends that sometimes stay from the sole stitching or from the upper stitching.

For the execution of this operation a small burner with an open flame can be used (but be careful not to leave burn marks on the shoe).

## 5. Finishing

After carrying out the operations previously described, the finishing is carried out properly. At this stage a considerable diversity of shoe finishing products is used, which vary according to the surface and the desired effect, always considering the initial finishing of the leather.

If the initial skin finish is waxy, natural and synthetic wax-based creams, wax emulsions combined with resins and solid waxes should be used.

If the initial skin finish is lacquer based, emulsions of nitrocellulose lacquer, aceto butyrate and aqueous emulsions of polyurethane resins should be used.

If the initial finish of the skin is oily based, combinations of synthetic oils, sulfated and sulphited, should be used to achieve color revival on sanded leather (nubuck) and also to get touch.

### 5.1. Applying Cream

It consists of the application of a cream on the leather, which aims to standardize the color of the shoe and standardize the pore of the leather.

Always use soft sponges when applying the cream, and always perform circular movements to avoid risks caused by continuous application.

It is important to mention that for better performance, it is advisable to distribute the cream evenly on the sponge by pressing the sponge with cream on a smooth surface or on a tile or glass, before the operation.



### 5.2. Brushing

Brushes are very important in the finishing process as they have functions as polishing, smoothness, brightness and removal of excess of finishing products.

The model of footwear, leather and other operations must be taken into account, since for each type of purpose there are suitable brushes, which vary in texture, width, diameter, degree of abrasiveness, number of rings, absorption and hardness.

Rotating machines, with manual speed selector, are the most suitable because they allow control of the speed, which is very important for obtaining the best results.



## 5.3. Applying Spray Paints

It is recommended to use compressed air guns in the paint booth for applying finish bases, applications of brightness, oils, inks for color correction and color enhancers.

The pistols have the advantage of uniformity of application and must have pressure control and always be well cleaned.



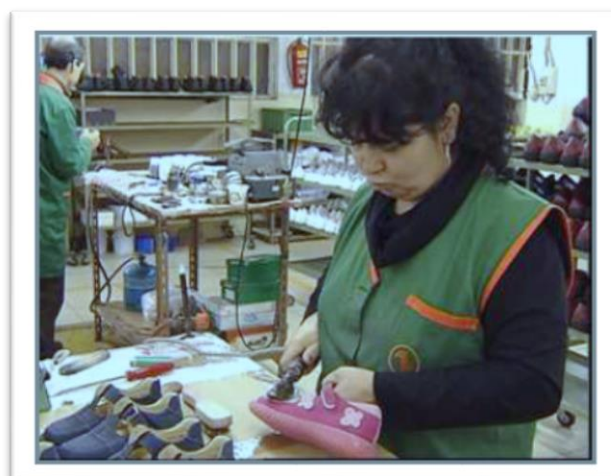
## 5.4. Ironing

This operation is performed to remove some wrinkles from the leather.

Hot air irons and/or dryers are used to obtain smoothness and to remove wrinkles resulting from the manufacturing process or from the properties of the leather, such as loose or wrinkled grain.

It is very important that the temperature of the iron is not excessive because it can burn the leather or the seam line as well as cause a loss of brightness.

It is recommended to use hot irons with temperature control

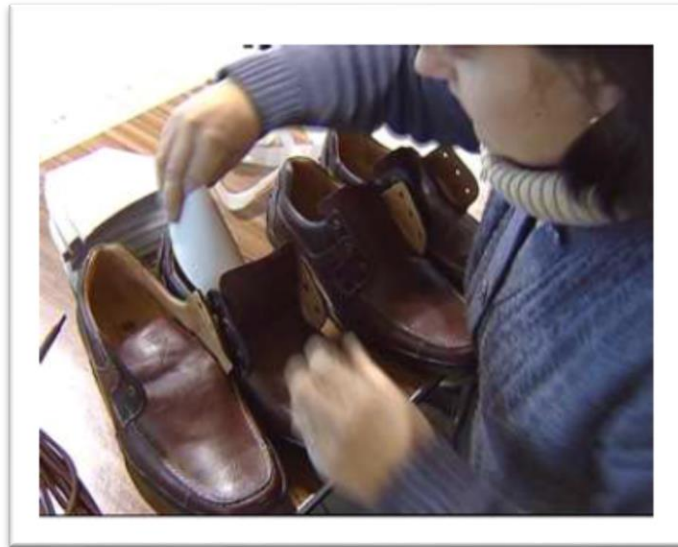


### 5.5. Inserting Fillers

This operation is performed at the end of the finishing.

It consists in filling place inside the shoe so that it maintains its look and will not deform.

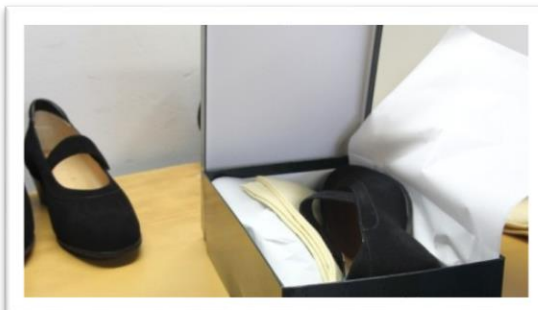
There are several types of filling, cardboard, pad, etc.



### 5.6. Labeling, Controlling and Boxing

These are the last operations to be performed in the finishing process.

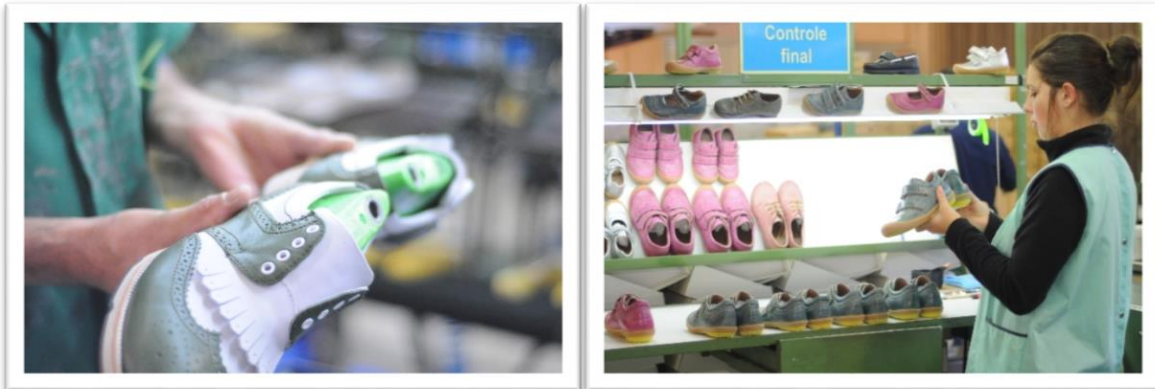
At this stage the operator places the labels provided, verifies the quality of the product, and if he does not detect any non-conformity, proceeds to placing it in a box. Any product identified as non-compliant should be separated and placed in the intended location for repair.





## 6. Quality Control

The operator must have the customer's standard sample or specifications so that the final product can be compared in the main characteristics, with a visual analysis (visual tests).



### Upper

- Loss of color or differences in hue, texture or shine of the material(s) when comparing both shoes of a pair
- Deformed toe area due to poor leather quality or incorrect toe puff application
- Differing toe heights when comparing both shoes of a pair
- Differing heel heights when comparing both shoes of a pair
- Symmetrical instep of both shoes of a pair (top view)
- Scratches and / or stains or other soiling on the inside or outside of the shoes
- Cracks in the finish
- Wrinkles and creases
- Crooked / misaligned or out of place seams. In particular, the heel seams should be visually examined by placing the pair of shoes together on a flat surface;
- Differing color or thickness of seams when comparing both shoes of a pair
- Skipped stitches
- Loose or discontinuous seams
- Correct Derby bars
- Ripped or wrinkled lining
- Broken, darkened, rusted, loose or poorly positioned metal parts (always check both shoes of a pair)
- Misaligned eyelets
- Decorative parts that are dirty, crooked or poorly positioned
- No laces
- Differences in lace color or lace thickness in a pair
- Protruding metal or other parts on inside the shoe that can hurt the foot
- Dirt of any kind, either on the inside or outside of the shoe
- Excessive glue, visible on the edges / glue line of the shoe
- Deformations of any kind
- Torn material(s) (such as torn leather at the shoe tip or torn lining)

### **Bottom**

- Sole detaching from the upper - points around the sole edge where no glue has been applied can easily be spotted
- Sole too short in relation to the upper
- Sole elements coming off, as for example outsole, midsole, insole, welt or heel. This type of test is, to a certain extent, destructive, if the separation of materials occurs, requiring the use of force to test the adhesive capacity of the components
- Protruding metal or other parts that can hurt the wearer
- Sole poorly centered
- Heel poorly centered
- Different heels sizes when comparing both shoes of a pair. It requires observation of the pair on a flat surface.
- Heel cover wrinkled or coming off
- Poorly fixed or loose heels. It requires the use of force in the test, being in a certain way, of a destructive character, if the separation of materials occurs
- Protruding nails, staples or clips, detected together by direct observation and probing
- Unsticked or wrinkled insole
- Variation in color, drawing and finishing of the sole or heel when comparing both shoes of a pair

## **7. Dispatch**

A basic procedure in the expedition of products is the preparation of the Packing List.

Packing List is a document which identifies the contents of the package. It should be either inside of the packaging, or in an attached shipping pouch. Some companies use packing list as a bill or invoice since it often indicates charges to be paid.

Packing List is included with a shipment to inform transport agencies, government authorities, and customers, about the contents of a package.

Some companies simply include a copy of the invoice in place of a packing list, however this may cause confusion, and does not provide all the necessary details about the content of a package.

The preparation of the packing list is usually done at a computer level and follows the guidelines issued by the customer when sending the order or orders.

Unlike an invoice, typical packing list does not show financial information. It also has some fields a typical invoice may not have, for example:





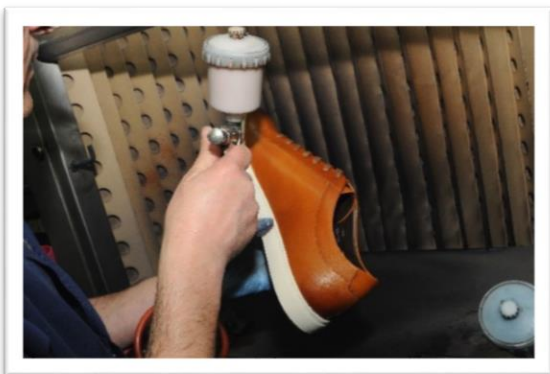
## 8. Finishing Department at Carité



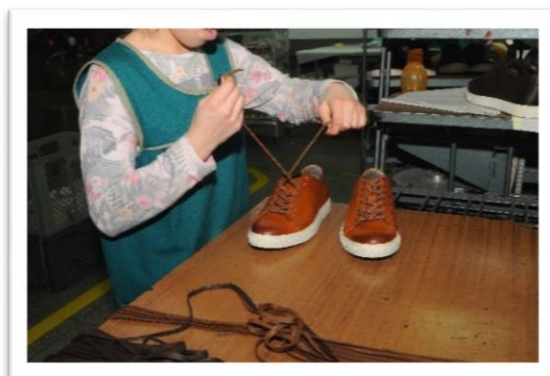
Cut excess lines and put finishing insole



Polishing manually



Polishing through the spraying tool



Applying laces



Applying laces



Confirmation sample



Finishing final control - Control of each foot individually



Control of each foot individually



Control of two feet at the same time



Control of two feet at the same time



Control of two feet at the same time



Structure for placing the nonconforming product



Preparation of the box to pack the footwear by placing sulphite paper in the base



Placing the first foot in the box



Placing the second foot in the box



Wrap the pair with the sulphite paper





Close the box by attaching the cover



Put identification label on the box



Place the box with product in the proper location (structure) to follow to finished product warehouse



## 9. Assessment/Feedback template

### 9.1. Introduction to Feedback Sheet

Unlike learning in formal environments as in classrooms or workshops, learning outcomes (LO) from work-based learning (WBL) in a learning station (LS) depend strongly on the actual equipment of the production line and the models and makes, which a shoe factory manufactures. If the shoe models produced do not require certain work tasks of a whole sphere (in stitching or assembly, for example), then it is simply not possible to acquire skills in this production line related to this method.

A systematic and transparent communication on concrete LOs acquired via WBL by a learner/apprentice between tutors, supporting the learner in the various departments, and the head of training, being responsible for the entire training programme, is of great importance in WBL.

With the intend to provide a concise and handy communication tool, we recommend using the matrices as shown below: They allow tracking the achievements of each trainee in each department in a quick and easy way. The matrices do not refer to any formal assessment; they simply state the degree of autonomy each trainee was able to reach within the given timeframe in each Sphere of Activity.

The matrices list the main work tasks (in bold) and the performance that can be acquired in each department. The work tasks refer to the acquired skills; to indicate that they include key competencies and knowledge the underlying elements for some of the work task are listed.

How to use the matrices: In order to give feedback on the learning progress of each trainee, please tick off the level of autonomy the learner has reached for each work task (choosing between needs assistance / needs instruction / needs supervision / completely independent).

If the work task in the matrix was not part of the training, you can leave it out or erase the work task; if additional work tasks were trained, please feel free to continue the list of work tasks according to your training goals.

In the end, the matrices will document what each learner has been able to acquire and which level of autonomy she/he has reached. And again, although this has already been said: Please bear in mind that you may have to adapt the matrices according to the processes and to the operations in your department.

# Sphere of Activity: Finishing

**Work task:** Identification of different finishing types

Reading and understanding the work ticket;  
 Providing and preparing the materials according to the work ticket;  
 Knowledge about upper materials;  
 Knowledge about finishing products;  
 Co-operating with colleagues;  
 Asking for support if needed.

**Evaluation**

Needs assistance	Needs instruction	Needs supervision	Completely independent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Place, Date

Signature

**Work task:** Operations common to different types of finishing

Reading and understanding the work ticket;  
 Providing and preparing the materials according to the work ticket and/or work plans;  
 Preparing the equipment and performing the operations:

- Sockliner fitting
- Edge inking
- Cleaning / repair
- Burning thread ends

Asking for support if needed.

**Evaluation**

Needs assistance	Needs instruction	Needs supervision	Completely independent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Place, Date

Signature



<b>Work task:</b>		<b>Specific finishing operations</b>	
<p>Reading and understanding the work ticket;          Providing and preparing the materials according to the work ticket;          Preparing the equipment and performing the operations:</p> <ul style="list-style-type: none"> <li>- Applying shoe polish</li> <li>- Brushing the shoe</li> <li>- Applying spray paint</li> <li>- Ironing the shoe</li> <li>- Inserting fillers</li> <li>- Labelling, controlling and boxing</li> </ul> <p>Asking for support if needed.</p>			
<b>Evaluation</b>			
Needs assistance	Needs instruction	Needs supervision	Completely independent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Place, Date		Signature	
<b>Work task:</b>		<b>Quality control / visual tests</b>	
<p>Performing a visual analysis against a customer's standard sample or specifications:</p> <ul style="list-style-type: none"> <li>- Upper control</li> <li>- Bottom control</li> </ul> <p>Asking for support if needed.</p>			
<b>Evaluation</b>			
Needs assistance	Needs instruction	Needs supervision	Completely independent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Place, Date		Signature	



<b>Work task:</b>				<b>Packing techniques and expedition procedures</b>			
Reading and understanding customer's instructions, packing list/other documents; Asking for support if needed.							
<b>Evaluation</b>							
Needs assistance		Needs instruction		Needs supervision		Completely independent	
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Place, Date							
Signature							
<b>Final evaluation (in this department)</b>							
<b>Finishing; including all work tasks above</b>							
<b>Evaluation</b>							
Needs further training				Can perform all work tasks (almost) independently			
<input type="checkbox"/>				<input type="checkbox"/>			
Place, Date							
Signature							