

CRAFTSMANSHIP



FOSTERING A NEW AND COMPETITIVE
APPROACH TO CRAFTS AND SEMI-INDUSTRIAL
HIGH ADDED-VALUE SECTORS

The Art of Footwear: Construction of Leather Sandals

GREECE



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CRAFTSMANSHIP+

THE ART OF FOOTWEAR: CONSTRUCTION OF LEATHER SANDALS

CONTENTS

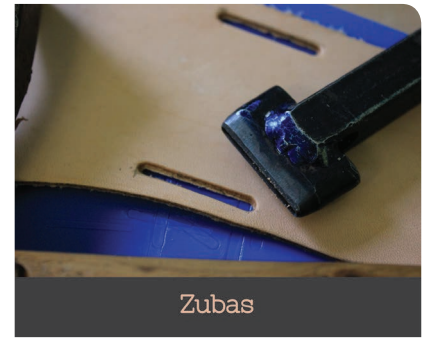
| | |
|----------------------------|----|
| MATERIALS | 3 |
| INTRODUCTION | 4 |
| STEP 1 | 6 |
| PREPARING THE SHOE LAST | |
| STEP 2 | 11 |
| STRAP DESIGN | |
| STEP 3 | 12 |
| FITTING THE STRAP | |
| STEP 4 | 17 |
| SOLE AND HEEL CONSTRUCTION | |
| GLOSSARY | 19 |



Shoe last, Measuring tape
Cutter, Hammer, Pliers



Fish Glue



Zubas



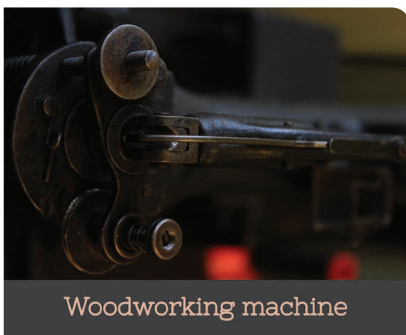
Woodworking machine



Woodworking machine



Woodworking machine



Woodworking machine

CONSTRUCTION OF LEATHER SANDALS

MATERIALS

fine paper tape
fishponds
adhesive brush
cardboard
leather for leash
and sandalwood bottom
Rubber for sole and heel

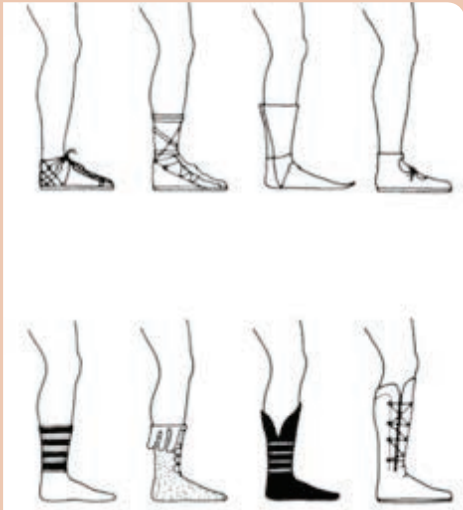
TOOLS

Shoe last
Measuring tape
Pencil
Cutter
Zubas 1,20 cm
Zubas 3,00 cm
Hammer
Ruler
Pliers

EQUIPMENT

Woodworking machine

INTRODUCTION



SOURCE

<http://www.tmth.gr/sciencelated/64-arxaia-elliniki-technology/377-arxaia-endymata-kai-ypodimata>



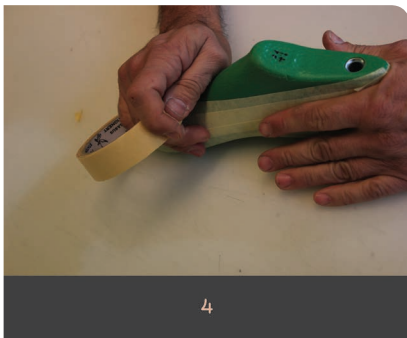
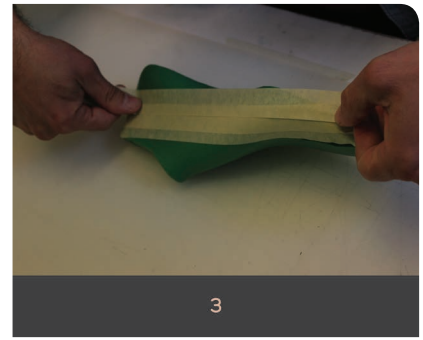
Leather was the main raw material for all kind of shoes in the ancient period. It is known that leather was an imported product, and in some cases so were the shoes. The basic types of ancient shoes were: the sandals, consisting of the sole that was held by straps from the foot, shoes that covered the leg up to the ankle and the boots that covered the leg with the tibia. Between these basic types, wide variety of designs intervene.

In general, the ancients preferred sandals, their main purpose being to be protected from the ground and keep their feet clean. Sandals are known to be the most common type of shoes that women wore since they spent most of their time at home. The Greek sandals differed from the ancient Egyptian ones, since the Greek ones had multiple straps with which they were secured to the leg. The rich wore leather sandals, while the poor wore sandals with wooden pads. The top part of the sandals was usually colored leather, possibly from goats. The soles were created of bovine leather of the best quality and consisted of several layers. On a 6th-century pot, a shoemaker using a half-moon shaped knife is depicted. Lasts (models of a foot) were hanging from the wall together with another knife. In an amphora of the same period a customer is depicted in the shoemaker's shop standing at the craftsman's workbench, stepping on a leather in order to have his feet shape outlined and have the sole cut at his number. Counting scales are being used today just like the ancient period. Sandals are still a part of the Greek history even after thousands of years. In the native market there is profound know-how, years of experience and tendency towards experimentation in structure and design. Every year new brands are being created bringing new ideas, materials and designs. Nowadays, the raw material (leather) for sandals originate from



Greece, South Africa, France, Germany, the Netherlands and are usually received semi(partial)-processed. The fur and the inside parts have been removed due to the chemical treatment required. In some regions of Greece, for example Tabakaria in Crete island, the processing procedure uses only environmentally friendly ingredients. Nowadays there are sandals in various patterns and colors, with different soles (flat sandals, platform sandals, heel sandals), bearing various decorating elements (beads, fabrics, ropes, fabrics, etc.).





Step 1 | PREPARING THE SHOE LAST

Covering the shoe last with tape

Cover the shoe last with tape in layers, as shown in pictures.

1 – 6

Straps designing on shoe last tape

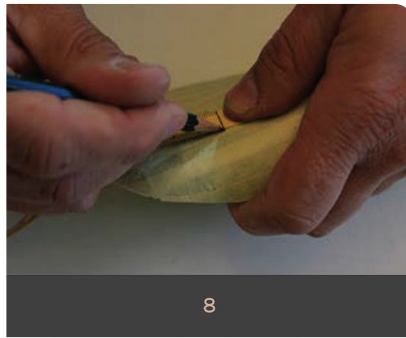
Design the shoe straps with a measuring tape by marking the tape that covers the shoe-last as follows:

Designing the 1st strap (1.2 cm width)

We design the first strap close to the toes (at the shoe-last's slick). By placing the measuring tape along the shoe-last so that 0 is at the toe-slot and the other end of the measuring tape extends along the toe, we mark on the paper with a pencil 2 marks as follows:

A mark at 0 (finger slot) // **mark 1**

A mark at 1.2 cm moving to the outside edge of the toe // **mark 2**



Next, we design 2 parallel lines spaced 1.2 cm apart. The first line starts from mark 1 and the second from mark 2. Both lines are extended to the outside side of the foot. We carry these two parallel lines with the help of the measuring tape. This way, we've designed the first short strap of the sandal.

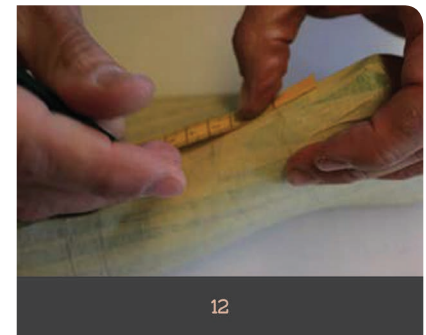
For the 2nd strap (3 cm width)

This strap will be at the height of the instep.

With the help of the measuring tape, we design the first line passing across the last, starting from the instep and extending it across the last.

Then we bring the second line, parallel to the previous one and at a distance of 3 cm. from the latter (i.e. to the fingers).

Now you have designed, 2 straps at the tape.



Measuring straps length

For the 1st strap (1.2 cm width)

In order to measure the length of the 1st strap, we rotate the measuring tape around the big toe at the height of the toe slot so that the starting point touches the latter, as in the picture below:

The first strap measures 9 cm.



CONSTRUCTION OF LEATHER SANDALS

For the 2nd strap (3 cm width)

In order to measure the length of the 2nd strap we place the measuring tape at the height of the instep and rotate it to both sides of this point so that it starts at one end of the last and ends at the diametrically opposite direction without passing from the bottom of the last as shown in the following photo:

We put a mark on the bottom of the last marking these two points.



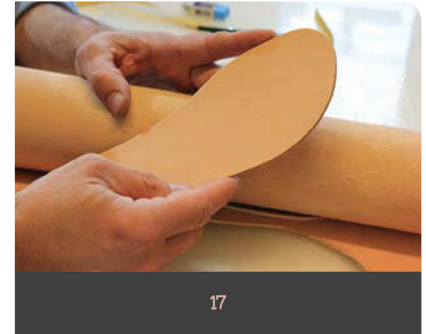
The length of the 2nd strap is 17 cm. We add 2 cm extra on each side of the strap, so the final length of the 2nd strap is **17+2+2=21.00cm**.

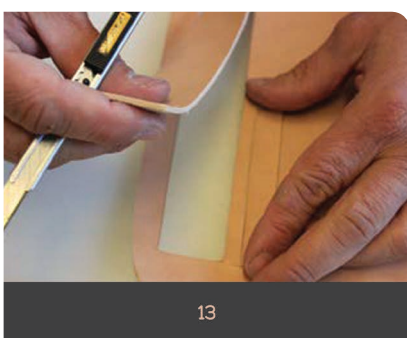
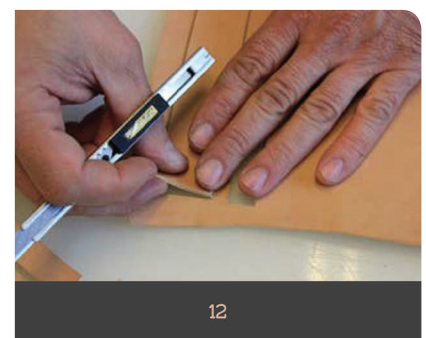
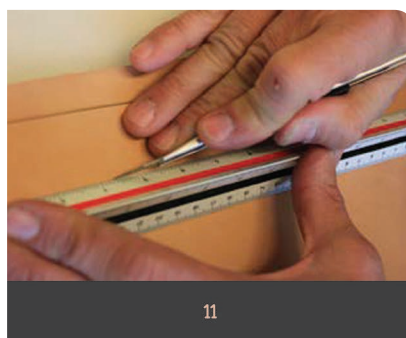
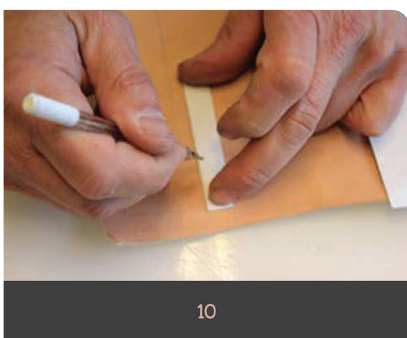
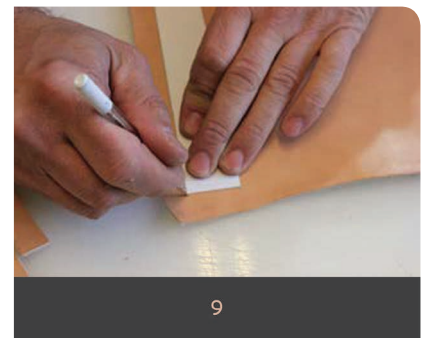
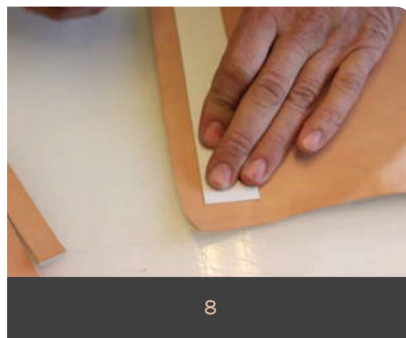
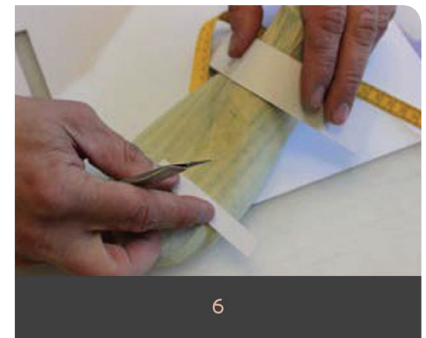
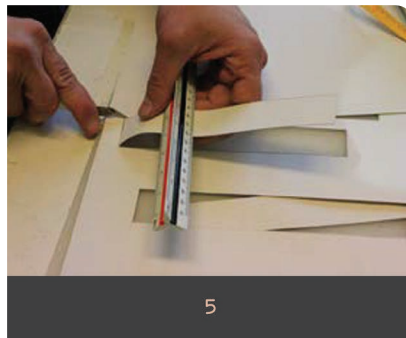
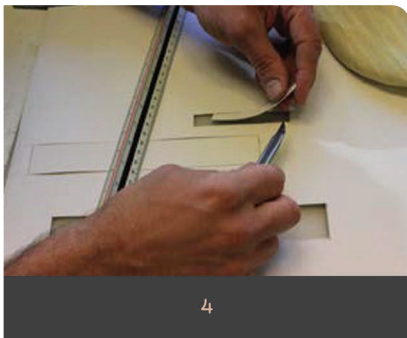
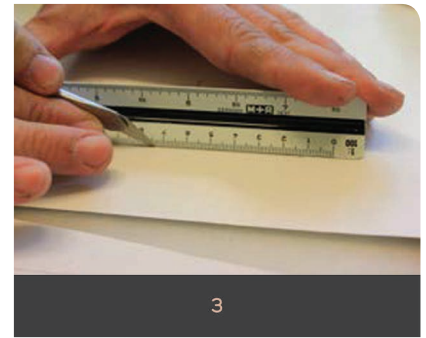
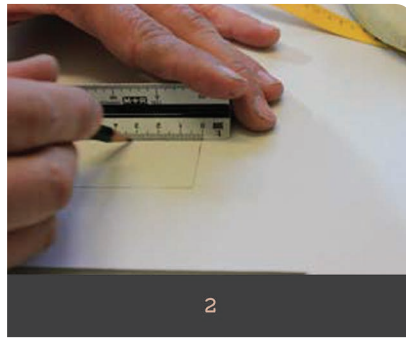
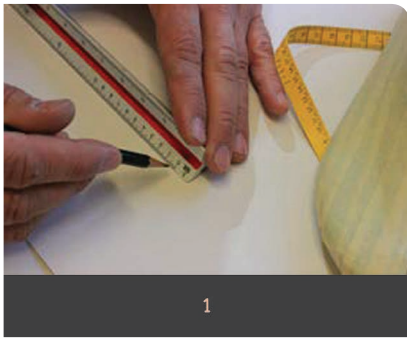
So we have calculated 2 straps with the following dimensions:

| Strap | Width in cm | Length (in cm) |
|---------|-------------|----------------|
| Strap 1 | 1,20cm | 9,00cm |
| Strap 2 | 3,00cm | 21,00cm |

Sole Outline

We place the last on the leather. Holding the pencil with a slight slope, we impress the outline of the last's bottom at the leather. With a cutter we are cutting the shape of the sole we designed.





CONSTRUCTION OF LEATHER SANDALS

Step 2 | STRAP DESIGN

Impress strap on paperboard

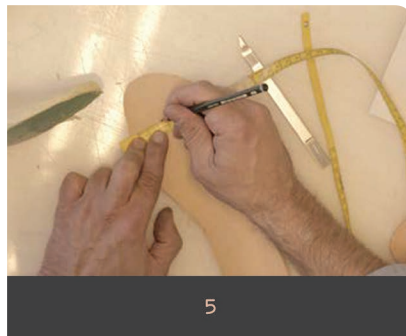
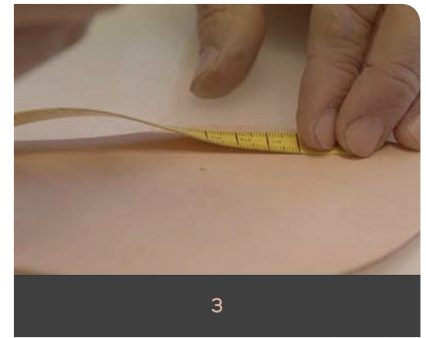
1 Using a ruler and pencil, we design on a paperboard two straps of the above dimensions. 1 2

2 Cut the 2 cartons around with a cutter and a ruler. 3 - 7

Design straps on leather

1 Place the two paperboards of the previous step on leather appropriate for straps. With a pencil and a ruler, we impress the outline of each paperboard at the leather. 8 - 10

2 Using a cutter we cut the shapes of the straps and as a result we are going to have 2 leather straps ready by the end of this step. 11 - 13



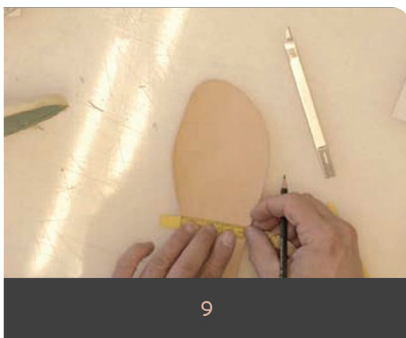
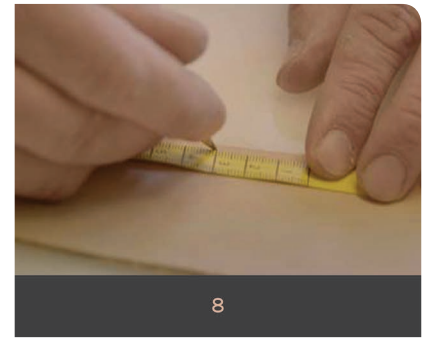
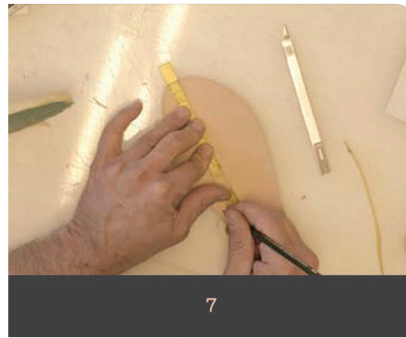
CONSTRUCTION OF LEATHER SANDALS

Step 3 | FITTING THE STRAP

Mark the soles of the shoe to make strap-holes
Mark the soles and there you will make holes for the straps (in a next step).

1st strap:

- 1 We measure the length of the toe slit (from where the last slit begins to the point where it ends) at the end of the last. A length of approximately 4.50 cm. **1**
- 2 Then we project this length on the sole, drawing with pencil a line that starts at the top of the sole, passes along it and has a total length of 4.50cm. The point where this line ends is point A. **2**
- 3 Add 1.20cm. (1st strap's width) from point A (and downwards) and we have point B. Therefore, line A joins these two points, therefore line AB, is 1.20cm long. **3**
- 4 We measure the surface of the big toe that is 2,50 cm: **4**
- 5 Copy" the AB line to the sole of the sandal, bringing a parallel straight line equal to AB (1.20cm) at a distance equal to the big toe's "width", ie 2.5cm: **5**

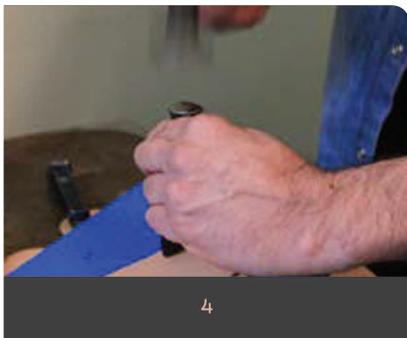
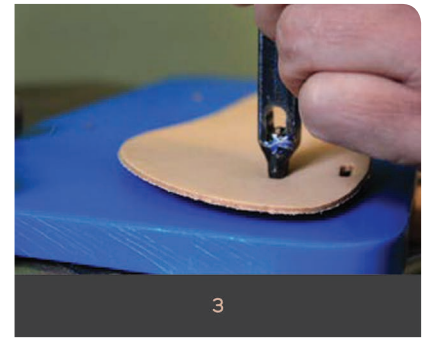
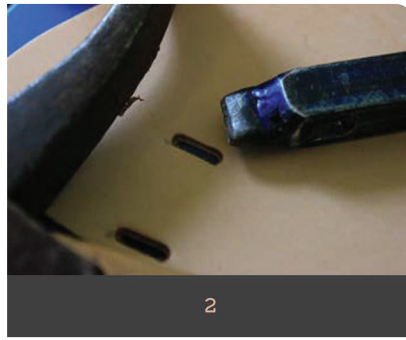
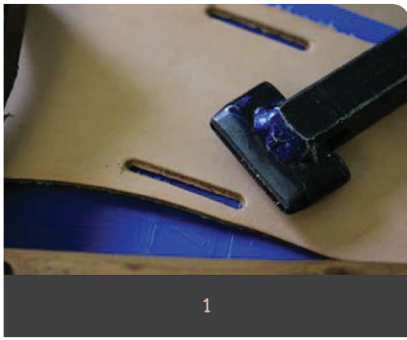


CONSTRUCTION OF LEATHER SANDALS

Similar procedure for fitting the 2nd strap

- 1 Measuring with the measuring tape from the point where the slug slit (at the tip of the last) to the mark that we put on the bottom of the reed in step 3 (to draw the strap on the last). The length is 13 cm. **6**
- 2 We project this length on the sole, in the same way as the 1st last. The point where the corresponding line ends is point C. **7**
- 3 Προσθέτουμε 3,00εκ. (πλάτος 2ου λουριού) από το σημείο Γ (προς τα κάτω) και έτσι προκύπτει το σημείο Δ. Η απόσταση, δηλαδή του Γ από το Δ είναι 1,20εκ. III. Add 3.00cm. (width of the 2nd strap) from point C (down) and thus point D. The distance, that is, C from Δ is 1.20cm. **8**
- 4 We measure at the bottom of the last the surface of the instep that is 6.00 cm. **9**
- 5 "Copy" the line CD to the bottom of the sandal, bringing a parallel straight line of equal length to the CD (3.00 cm) at a distance equal to the "width" of the instep, ie equal to 6.00cm.

At the end of this stage, we have the marks at the bottom of the sandal where we will make the holes for the straps.



CONSTRUCTION OF LEATHER SANDALS

Making hole at the sole to fit the straps

1

Make the holes for the straps with a 1.2cm punch to make the holes for the 1st strap, and a punch of 3.00cm. to make holes for the 2nd strap, and a hammer.

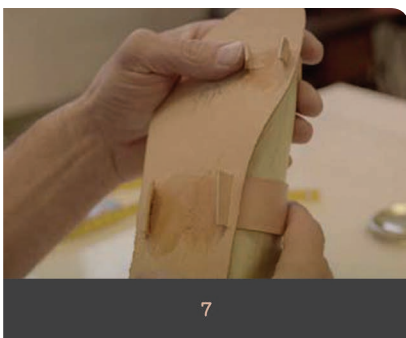
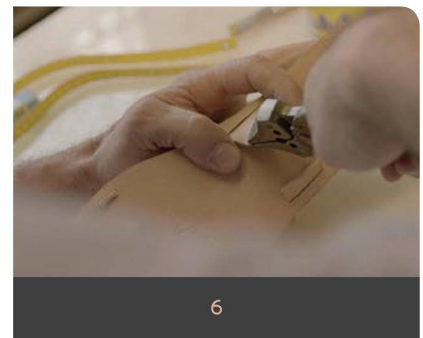
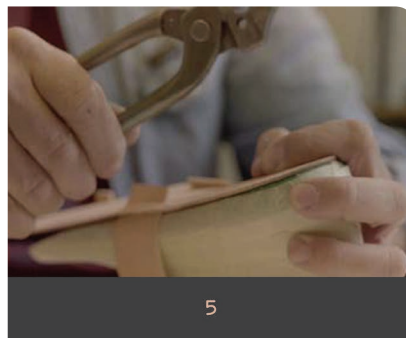
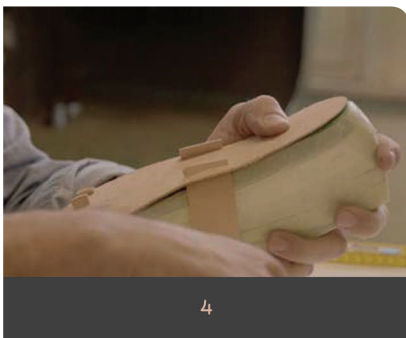
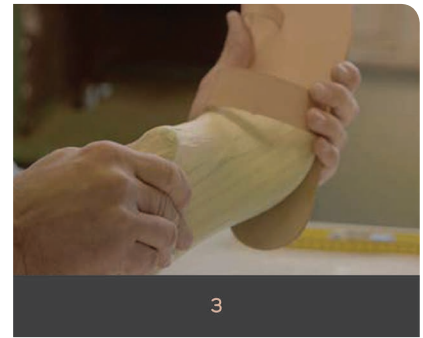
1

2

2

Place the punch vertically to the bottom at the 1st point and hit it with a hammer. We repeat the process for each of the 4 points we have already marked in the previous stage, using the appropriate punch each time.

3 - 5



CONSTRUCTION OF LEATHER SANDALS

Fitting straps at the shoe-sole

1
2
3
4
5
6
7

Insert the straps through the holes. 1 2

Adjust the shoe-last inside the sandal to shape it. 3

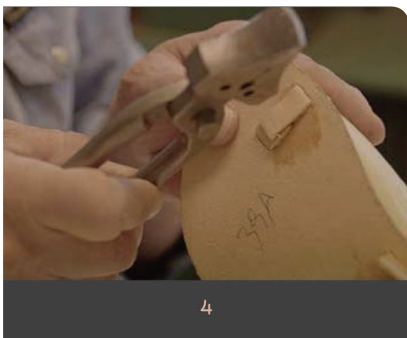
Η άκρη του πάτου πρέπει να βρίσκεται στην άκρη του καλαποδιού: 4

Use a nail to keep the shoe-last at this position: 5

We use the pincer to stretch the straps: 6

Using a brush, we apply glue to the inner surface of the straps and at the bottom surface between the straps. Allow the glue to dry for about 5 '. 7

We move at the next step, after the glue dries.



CONSTRUCTION OF LEATHER SANDALS

Sticking straps at the sole

1

Follow the next steps for each strap. First, we stick on of the straps protrusion

1

2

2

With pincers we stretch the other protrusion of the same strap and we stick it on the first protrusion.

3

3

We knock lightly with the pincers. The leash must be stretched.

4

4

We repeat the procedure for the 2nd strap

Step 4 | SOLE AND HEEL CONSTRUCTION

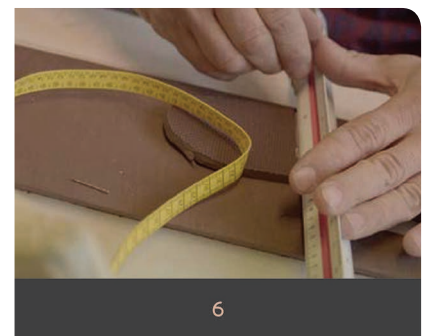
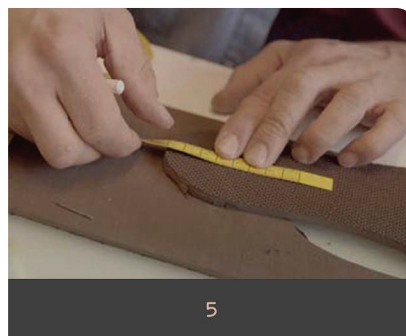
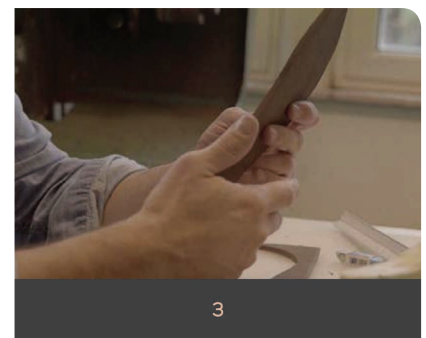
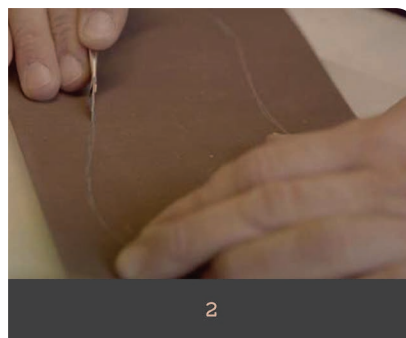
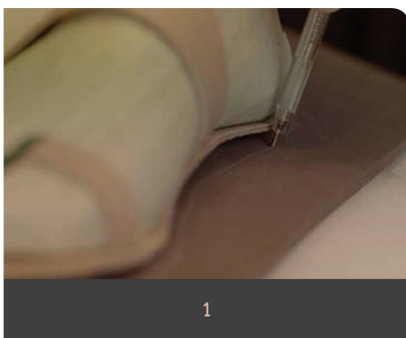
Preparation of sandal rubber sole

1

With a pen, we impress the bottom outline on a rubber insole, making sure to leave a 2mm margin (between the bottom and the contour with the pen) to cut it comfortably. **1**

2

Cut the outline of the bottom on the rubber with a cutter. **2** **3**



Heel construction

1

Use the measuring tape to measure at the rubber sole the distance between the tip of the sole (back of the foot) and the ankle height. In this case, the distance between the ankle and the end of the sole is 7 cm. **4**

2

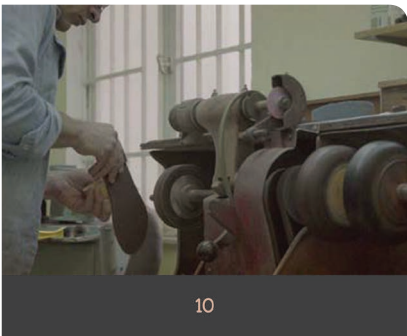
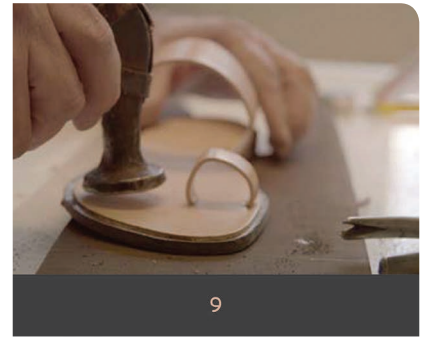
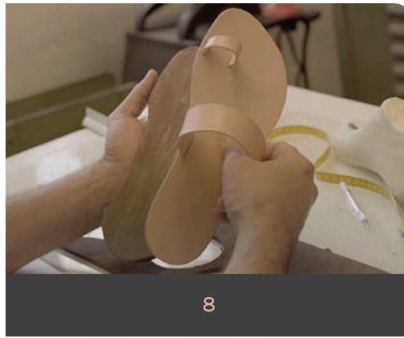
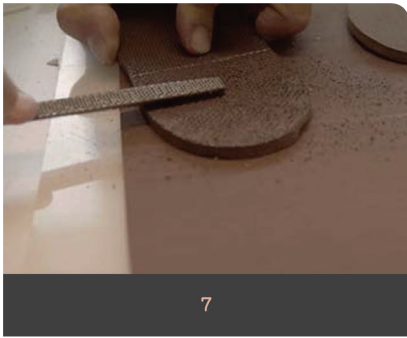
Add 1 cm extra to this measurement, resulting in a final "length" of 8 cm. Put a mark with the pen on the sole at a distance of 8cm. from its rear edge. **5**

3

With the help of a pen and a ruler, we bring a line passing through this point across the sole as follows: **6**

4

Στη συνέχεια αποτυπώνουμε το περίγραμμα του «τακουνιού» πάνω στο λάστιχο και αμέσως μετά κόβουμε το περίγραμμα του τακουνιού με το κοπίδι.



CONSTRUCTION OF LEATHER SANDALS

Heel glue on the sole

1

We roll the soles and the heel with a file. **7**

2

Apply glue to the heel and the sole surface to be covered by the heel. Allow the glue to dry 5 '.

3

Once the glue has dried, stick the heel on the sole.

Sticking (outer) sole together with insole

1

Apply glue at the outersole and the insole so that we can stick the together. Allow the glue to dry for 5 'and immediately stick the insole to the outersole: **8**

2

Use a hammer to make sure that the agglutination permanent. **9**

Filling

Using the scraper machine, we need to file the sandal so to have the bottom of the sandal with the sole as a smooth surface. **10**

GLOSSARY

Zubas:

A small auxiliary tool in the hand, hammering it on a surface to pierce it

Shoe Last: a wooden dummy of the lower leg, of a natural size, on which the shoemakers assemble the skins and make the shoes

Cutter:

generic name for various small cutting tools

Instep (coup de pied): It comes from the French “coup de pied” which means kicking. It refers to the upper feet part from toes to ankle.

Measuring tape:

plastic tape, usually divided into one hundred and fifty points, used as a measure of length in particular for the measurement of parts of the human body

Curl:

shoe machine that cuts / tightens the sole

Sandal:

a shoe consisting of a thin flat sole, restrained on the foot with thin straps and tied high or low in the leg.

Tape:

paper tape wrapped in a cylinder, used in electronic computing and cash registers.

Fishglue:

animal glue