

Hoop tying Bordelais

MARIAUD CONSULTING



Our PROGRAM

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Presentation

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Methodology



Wooden Hoop Tying with Wicker

In traditional cooperage, **chestnut wooden hoops** were secured and closed using a **wicker binding called vime**.

This technique, widely used on **Bordeaux barrels**, ensured the strength of the hoop while relying **on local and renewable materials**.

An Ancient and Ingenious Craftsmanship

Wicker tying makes it possible to:

- ✓ **Firmly secure** the ends of a wooden hoop.
- ✓ Use a natural, flexible, and durable material: wicker.
- ✓ **Ensure hoop stability without metal** while maintaining pressure on the staves.
- ✓ **Preserve a historical method** that distinguished Bordeaux barrels (8 wooden hoops tied with wicker).

How Wicker Hoop Tying Works

- ◆ The wicker acts as a binding: flexible during installation, but tightening as soon as the hoop is placed under tension.
 - ◆ It prevents the ends of the wooden hoop from spreading apart under the pressure of the staves.
 - ◆ Even after strong tightening, the binding remains removable and replaceable, making barrel maintenance easier.

Wicker

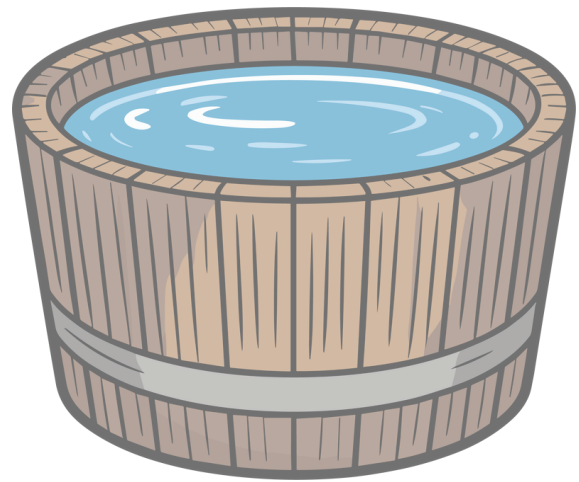
- Raw material: young flexible willow shoot (Salix), cultivated and harvested each year.
- Use: basketry, bindings, hoop tying.

Vime

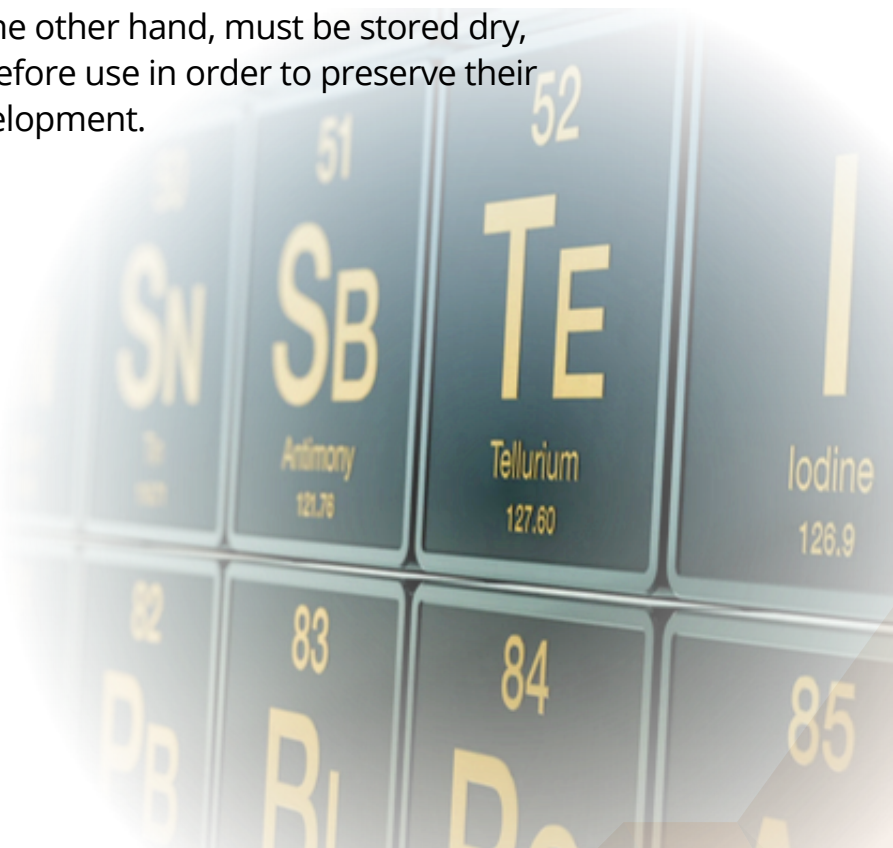
- Old/regional name for wicker (especially in the Angoumois region).
- By extension: a wicker strand used as a tie (for tying vines, fastening wooden hoops, or weaving).

Bundles of wooden hoops must **be soaked in water** before use in **order to soften** the hoop material and prevent breakage during hooping.

Depending on the cooperage practices, the soaking time may vary from **a few hours to overnight before use**



The wicker strands (vimes), on the other hand, must be stored dry, **sealed airtight**, and **sulfured** before use in order to preserve their flexibility and prevent mold development.



1



Using the drawing knife, the end of the wooden hoop is trimmed to obtain a clean and regular edge.



2



Taking the hoop measurement on the barrel

Place the hoop against the barrel to measure the exact working length:

- Position your side of the hoop at the bottom, resting against the quarter hoop.
- Bring the opposite side flush with the chime.

Place the hoop directly on the barrel in order **to determine how far the other end must be worked.**

The orange mark on the hoop indicates how far the opposite end must be worked.

Two solutions to keep track of the mark:

- Either **draw a visible mark** (marker, chalk, pencil).
- Or keep **your finger on the marked location** until the next step.

The important thing **is not to lose the reference point** before working the other end of the hoop.

3



Securing and tapering the end of the hoop

- Place the hoop in a press to hold it firmly.
- Work the uncut end using a drawing knife.
- Gradually taper the thickness from the marked reference point to the end so that the hoop end becomes progressively thinner down to zero.

🎯 Purpose of the tapering

- Remove major wood defects (such as knots).
- Avoid excessive thickness when overlapping the two hoop ends.

1



2



3



excessive thickness



reduced thickness buildup



4



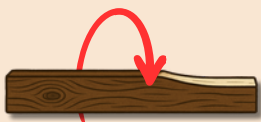
Reducing the width of the hoop

- Place the hoop back in the press on the side already worked in order to hold it firmly.
- Work the right side and then the left side using the drawing knife.
- Gradually taper each side in order to reduce the width of the hoop and obtain a uniform thickness.



🎯 Purpose of the tapering

- Avoid excessive thickness where the two ends overlap.
- Ensure a uniform width along the entire length of the hoop.



For the remainder of the explanations, the piece is rotated in order to be shown in top view. All the following diagrams and explanations will therefore be based on this new perspective.

1



2



3



The rear end still protrudes.



The rear end is aligned.



5



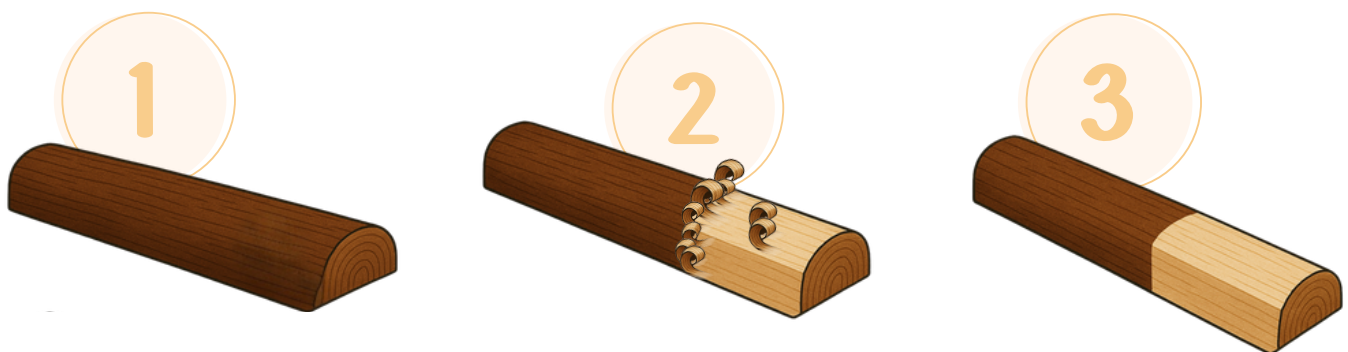
Whiten the opposite end of the hoop.

- Place the hoop in the press, this time positioning the opposite end toward you.
- Using the drawing knife, whiten only the surface over a length of approximately one hand width (7 to 10 cm).
- Work gently without trying to reduce the thickness: the objective is simply to clean and smooth the wood surface.

🎯 Purpose of whitening

- Obtain a clean and visually appealing hoop end.
- Prepare the area for a harmonious visual assembly without modifying the hoop dimensions.

After using the drawing knife, you can use a sharp knife or a utility blade to refine the whitening. This step removes the small fibers and fuzz left on the end of the hoop. The result will be cleaner, smoother, and more visually appealing, especially on woods such as chestnut.



Unwhitened end
non-aesthetic
appearance.



Extremo sin blanquear
acabado poco estético.



5



Taking the hoop measurement

Once both ends have been worked, check the hoop dimension again to verify the correct tension.

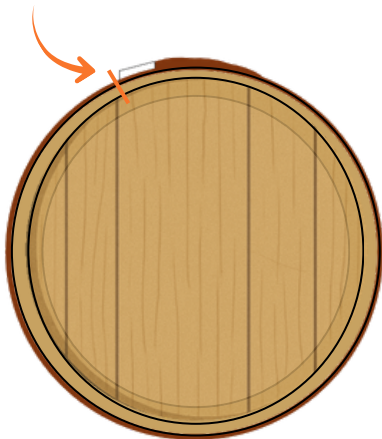
✦ Tip:

- Place the hoop against the quarter hoop, facing you, on the bung side.
- Align it flush with the end of the barrel on the opposite side.

This position gives you an ideal average **tension for the next steps**.

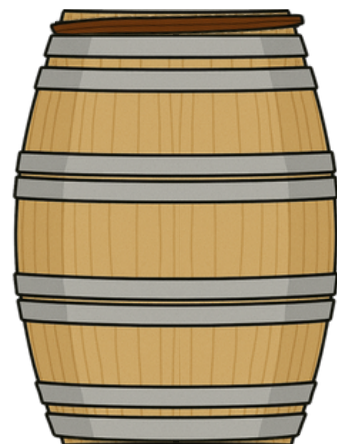
Keep the hoop held in this position: it will be used directly for the next step, **installing the wire**.

The orange mark is a visual reference added to illustrate the hoop holding area.



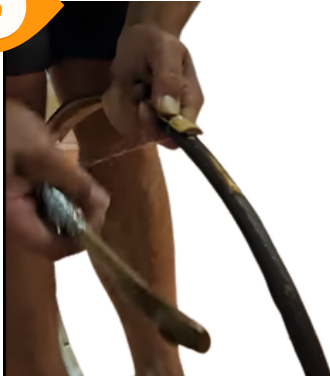
This diagram shows **the barrel viewed from above**, with the wooden hoop in position.

The hoop measurement can be **taken with a slight angle**, allowing additional **tension** and providing **tighter fastening during installation**.



In practice, the wooden hoop is held with **the thumb** at this point in order to **keep the reference position** and preserve **the correct diameter and tension** until the next assembly step.

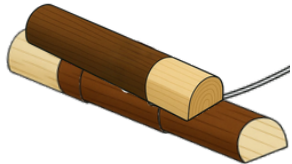
6



🎯 Purpose of the step

- The objective is to **firmly tie the two ends of the wooden hoop** together in order to keep them in position before final hooping.
- This operation ensures that the hoop maintains **the correct tension and diameter** during assembly.

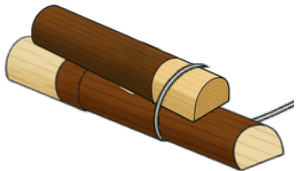
Positioning



- Place the two ends of the hoop one over the other: **the whitened section overlaps the tapered section.**
- **The wire must pass at the front**, between the two hoop ends, **in the overlapping area.**
- The wire should be positioned about **"one finger width"** from the end, approximately **3 to 4 cm.**

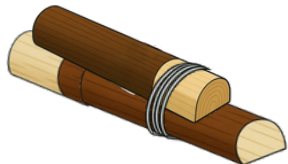
Front wire locking

- Trap the end of the wire **between the two pieces of wood.**
- Hold it **firmly** to prevent slipping.



Wrapping

- Make **approximately four tight wraps** around the two hoop ends.
- Each wrap must be even and without **overlapping in order** to ensure **uniform pressure.**



There are specific tools designed for tightening the wire, but a simple piece of wood is enough to achieve effective tension.



Final rear locking

- Pass the wire **behind the hoop.**
- Trap it **between the two ends**, this time on **the opposite side from the first locking point.**
- Pull slightly to **tension the wire** before cutting it.

Final result →



8



Determining the wicker tying area

Once **the wire** has been installed and **the hoop dimension defined**, the tying area must be marked.

To do this:

- Make a **template** that will serve as a reference for all hoops.
- Use it **to mark the beginning** and **the end** of the wicker tying area.
- This area represents approximately **20 cm in length**.

☞ This template ensures **uniformity across all hoops**, provides a clear reference for the wicker work, and results in more consistent assembly during final fitting.

Making a marking template

The template can be very simple:

- Use a piece of **hoop strip** (or hoop section).
- Drill two small holes marking the two ends of **the tying area**.

This template is used to quickly transfer onto each hoop the reference **marks for the beginning** and **the end** of the wicker tying area, **approximately 20 cm long**.

Marking the wicker tying area

- Using the template, make a small mark on the hoop with a marker or pen.
- This mark indicates the wicker tying area.

This dimension is a common average specific to each cooperage:

it may vary slightly depending on workshop habits or the type of barrel.

The important thing is to maintain consistency across all hoops to ensure clean and uniform assembly.

8



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- Using the template, make a small mark on the hoop with a marker or pen.
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 **Preparing the wicker strand for tying**

Step – Measure and bend

Take approximately 5 cm from the end of the wicker strand and gently bend it between your fingers.



Step – Break the inner core

Reinforce the bend by pressing firmly to break the inner core without breaking the outer skin.

 This action prepares the strand for separation.



Step – Remove the core

Starting from the bend, remove the white inner core over approximately 5 cm, as if peeling the strand.

 Only the outer orange skin should remain.



Step – Obtain the tapered end

You obtain a thinner and more flexible strand, composed only of the outer skin over the last 5 cm, ready to be inserted between the wooden hoops.

Before

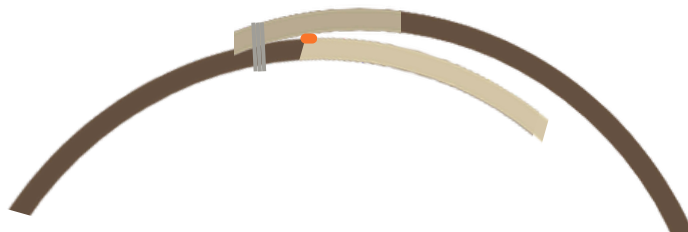


After



At the end, the inner core has been removed: only the wicker skin remains, carefully tapered.

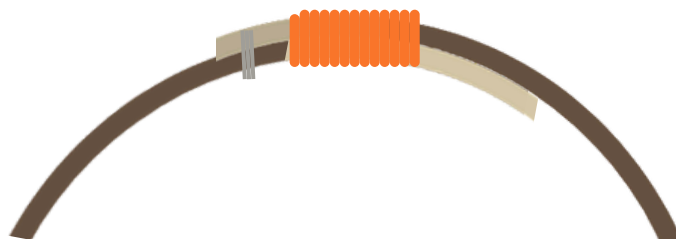
10



Slightly spread the inner **part of the hoop** in order to insert **the tapered wicker** end at the mark indicating the beginning of the tying area.

Once in place, **release the inner** part of the hoop so that **the wicker locks naturally**.

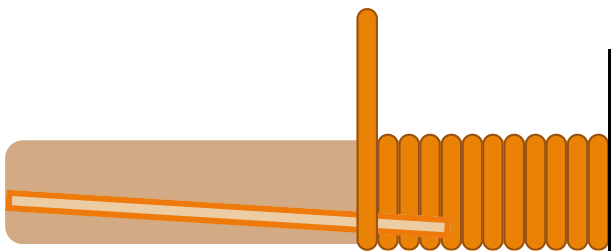
During the first wrap, make sure to fully **cover the trapped section** in order to secure it firmly in place from the beginning of the binding process.



Next step: By hand or using a **wooden mallet**, wrap the wicker strand firmly and evenly in order **to securely bind the two ends** of the hoop together.

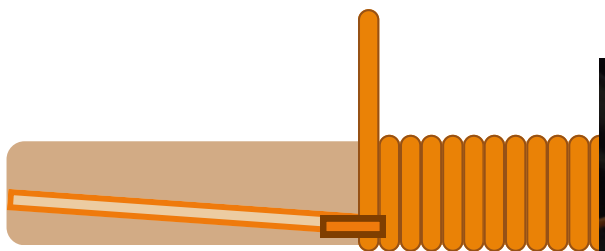
Cooper's wooden mallet





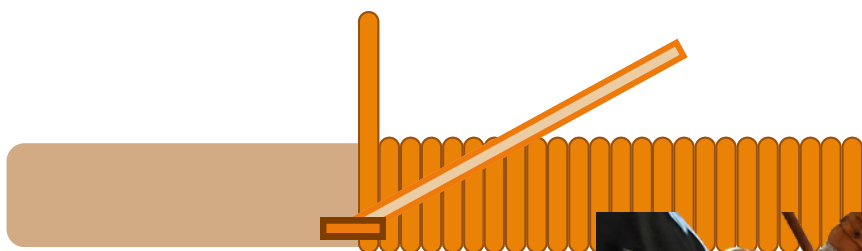
Step 1

Pass the new wicker strand underneath the strand already tied.



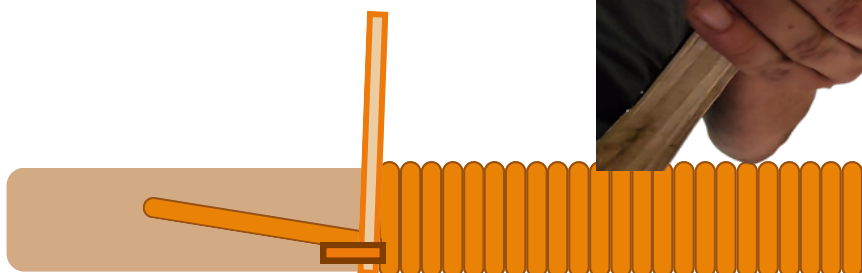
Step 2

Fold the end of the new strand over the end of the tied strand.



Step 3

Pass the new strand to the other side of the end of the tied strand, so as to create a crossing.



Step 4

Begin wrapping the new strand around both ends: the folded end of the new strand and the end of the tied strand, in order to secure the junction together.

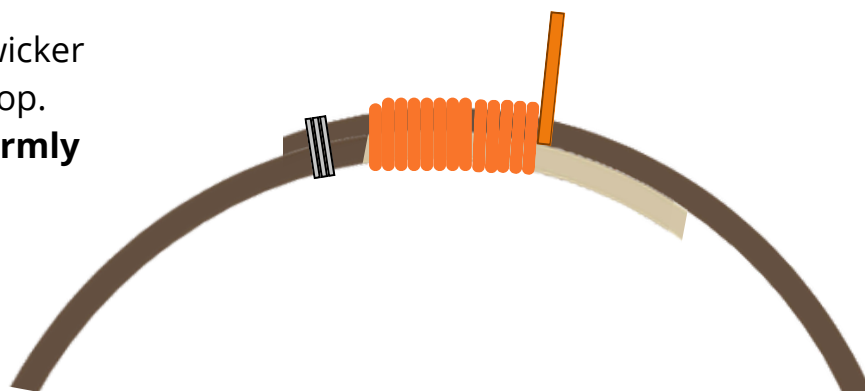
Finishing the tying

Once the tying is completed and the wicker strand reaches the last mark on the hoop, proceed to the clean closure of the binding:



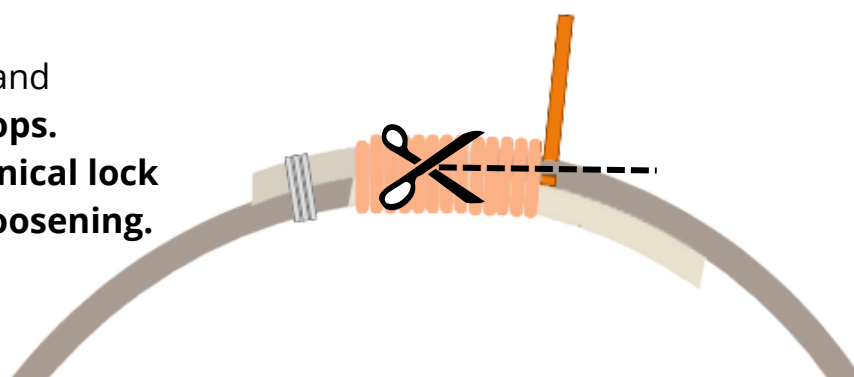
Position the end of the strand:

Bring the last section of the wicker strand **tightly** against the hoop. Check that the final wrap is **firmly seated and even**.



Lock the strand:

Insert the end of the wicker strand **between the two wooden hoops**. This clamping creates a **mechanical lock** that prevents **the tying from loosening**.



Cut flush:

Using a **sharp knife or pruning shears**, **cut flush** with the hoop without damaging the wicker skin.

The strand should **visually disappear into the joint**, leaving a clean, tight, and continuous finish.

This operation can also be carried out once the hoop is in place on the barrel.

Positioning the wooden hoops



- **The first wooden hoop**, placed against the quarter hoop, must have **its overlap oriented opposite** to the overlap of the galvanized steel quarter hoop.
- **The second wooden hoop**, positioned flush, must have **its overlap oriented in the same direction** as the galvanized steel quarter hoop.



To ensure proper holding of the chestnut hoop, **three or four** nails are placed evenly around **the entire hoop**.

To avoid piercing **through the stave**, it is important to drive the nails at a **slight angle**.





*It is now up to you
to put it into practice
and refine your
craftsmanship!*