THE THELEN RESERVE

BOURBON: GRAIN TO GLASS

PART 2 OF 2 • BARREL TO GLASS

Follow clear new-make spirit through oak, time, selection, and bottling.

07 • Build and Char the Barrel [1,5]



Barrels are prepared alongside spirit production. American white oak is common; the law requires oak.

What happens	Why it matters	What changes
A cooper shapes seasoned oak staves into a new barrel and chars the inside.	Heat alters wood chemistry. Char and the heat-treated layer beneath it play different roles.	Seasoned oak → a new charred vessel.

08 • Set Entry Proof and Fill [1,5]



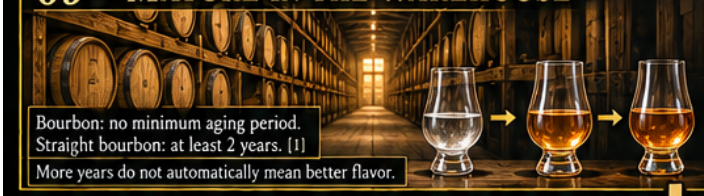
125 PROOF
62.5% ABV
MAXIMUM

Bourbon barrel-entry limit.

Distillers may choose a lower entry proof.

What happens	Why it matters	What changes
Water may lower the spirit's strength before it enters the new charred barrel.	The alcohol-to-water balance influences which wood compounds dissolve.	Clear new make → spirit resting in oak.

09 • Mature in the Warehouse [5]



Bourbon: no minimum aging period.
Straight bourbon: at least 2 years. [1]

More years do not automatically mean better flavor.

What happens	Why it matters	What changes
Spirit extracts wood compounds while oxidation, ester reactions, and evaporation reshape it.	Cask, time, temperature, humidity, and warehouse position create variation.	Clear spirit → amber whiskey with evolving aroma and texture.

10 • Sample and Select Barrels [3,6]





Combining bourbon barrels is different from adding neutral spirit.

What happens	Why it matters	What changes
Tasters assess maturity and character, then select barrels for a batch or a single-barrel release.	Selection balances a target flavor profile with the individuality of each barrel.	Separate mature barrels → a chosen release.

11 • Proof and Filter [1,3]



80 PROOF
40% ABV
MINIMUM

Bourbon bottling strength.

100 U.S. proof = 50% ABV.

BARREL-PROOF OPTION
May omit dilution.

What happens	Why it matters	What changes
Water may set bottling strength. Filtration can remove char particles; some producers also chill-filter.	Strength affects aroma, texture, and heat. Filtration influences clarity and retained components.	Selected whiskey → bottle-ready bourbon.

12 • Bottle, Label, and Taste [1,2]



No coloring or flavoring is added to bourbon.

What happens	Why it matters	What changes
Bourbon is filled, sealed, and labeled with its identity and alcohol strength.	The label helps explain the release; tasting reveals what grain, process, and oak created.	Bottle-ready bourbon → the finished pour.

Whiskey does not continue barrel maturation in the bottle.

Inside the Barrel [5]



Extraction
Wood compounds enter the spirit.



Reaction
Molecules change and new aromas form.



Adsorption
Char can bind some compounds.



Evaporation
Water and alcohol escape.

Vanillin is associated with vanilla; oak lactones with coconut and woody notes. Flavor depends on concentration and interactions.

The Transformation

NEW OAK + CLEAR SPIRIT → MATURE WHISKEY → SELECTED RELEASE → FINISHED POUR

NOSE • PALATE • FINISH • FINAL TAKE

Follow the craft. Taste the result.

SELECTED REFERENCES

[1] 27 CFR §5.143. [2] Kelly et al., *Beverages* (2023), 9:64, doi:10.3390/beverages9030064.
[3] AICHE, *The Chemistry of Bourbon* (2021). [5] Gollihue, Pook & DeBolt, *J. Institute of Brewing* (2021), doi:10.1002/jib.660.
[6] Maker's Mark: *Bourbon Making Process*. Practices vary by producer.

THE THELEN RESERVE

Understand the craft. Follow the transformation.