

## Finishing Characteristics of Common Woods (a)

Species	Pore Structure	Fresh-Planed Color (b)	Natural Color Change (c)	Sandability and Minimum Final Grit (d)	Stainability	Effect of Clear Finish
<b>Ash</b>	Pore size: Large. Location: Earlywood only; creates very strong grain patterns. Glass-smooth finish: Filling required.	Sapwood: Pale tan to very light golden brown. Heartwood: Darker.	Slightly darker and more yellow-gold.	Difficult. Stop at 120 grit. Coarse grain helps to hide sanding scratches.	Good. Challenging to make dark without using a multiple-step staining process.	Oil-based: Adds a warmer golden tone. Water-based: Color remains light.
<b>Butternut</b>	Pore size: Medium. Location: Throughout. Glass-smooth finish: Filling required.	Heartwood: Light greyish, greenish, or pinkish brown. Sapwood: White.	Lighter, to a uniform golden brown, and the pores lose their dark color.	Easy to Medium. Stop at 150 grit. Coarse grain helps to hide sanding scratches. Can contain fuzzy areas.	Excellent. Stains dark easily with pigment stain or dye stain.	Oil-based: Darkens and enriches color. Water-based: Color remains light.
<b>Cherry</b>	Pore size: Small. Location: Throughout, but more prominent in earlywood. Glass-smooth finish: Filling not required.	Heartwood: Light pinkish to medium reddish brown. Sapwood: White.	Darker reddish brown, although the intensity can vary greatly.	Medium to Difficult. Stop at 180 grit. Higher grits are required to hide sanding scratches.	Mediocre. Prone to blotching. (e) Pores appear as dark specks when stained. (e)	Oil-based: Darkens and enriches the color. Water-based: Color becomes pale and washed out.
<b>Hard Maple</b>	Pore size: Very small. Location: Throughout. Glass-smooth finish: Filling not required.	Sapwood: Very pale tan. Heartwood: Dark brown.	Slightly darker and more golden.	Difficult. Stop at 180 grit. Higher grits are required to hide sanding scratches.	Mediocre. Prone to blotching. (e) Pores appear as dark specks when stained. (e)	Oil-based: Adds a warmer golden tone. Water-based: Color remains light.
<b>Mahogany</b>	Pore size: Medium. Location: Throughout. Glass-smooth finish: Filling required.	Heartwood: Light to medium reddish brown. Sapwood: Light to medium reddish brown.	Usually less reddish, lighter, more golden brown.	Easy to Medium. Stop at 150 grit. The grain helps to hide sanding scratches. The density of different types of mahogany can vary widely.	Excellent. Stains dark easily with pigment stain or dye stain.	Oil-based: Darkens and enriches the color. Water-based: Color becomes pale and washed out.
<b>Poplar</b>	Pore size: Small. Location: Throughout. Glass-smooth finish: Filling not required.	Sapwood: White. Heartwood: Green; sometimes includes dark purple or black streaks.	Sapwood: Golden brown. Heartwood: Dark brown.	Easy. Stop 150 grit. Low density makes sanding go faster.	Mediocre. Prone to blotching. (e)	Oil-based: Adds a warmer golden tone to sapwood and darkens the heartwood. Water-based: Sapwood remains light; heartwood looks washed out.
<b>Red Oak</b>	Pore size: Very large. Location: Earlywood only; creates very strong grain patterns. Glass-smooth finish: Filling required.	Heartwood: Tan to slightly pinkish brown. Sapwood: White.	Slightly darker and more golden.	Medium. Stop at 120 grit. Coarse grain helps to hide sanding scratches.	Good. Challenging to make dark without using a multiple-step staining process.	Oil-based: Adds a warmer golden tone. Water-based: color remains light.
<b>Black Walnut</b>	Pore size: Medium. Location: Throughout. Glass-smooth finish: Filling required.	Heartwood: Dark greyish brown with purple highlights. (f) Sapwood: Greyish brown to white.	Lighter and more golden brown.	Medium. Stop at 150 grit. Coarse grain helps to hide sanding scratches.	Excellent. Stains dark easily with pigment stain or dye stain.	Oil-based: Darkens and enriches the color. Water-based: Color becomes pale and washed out.
<b>White Birch</b>	Pore size: Small. Location: Throughout. Glass-smooth finish: Filling not required.	Sapwood: Pale, slightly golden brown. Heartwood: Dark brown.	Slightly darker and more golden.	Medium. Stop at 150 grit.	Mediocre. Prone to blotching. (e) Pores appear as dark specks when stained. (e)	Oil-based: Adds a warmer golden tone. Water-based: Color remains light.
<b>White Oak</b>	Pore size: Large. Location: Earlywood only; creates very strong grain patterns. Glass-smooth finish: Filling required.	Sapwood: Tan to very light greyish brown. Heartwood: Darker.	Slightly darker and more golden.	Very Difficult. Stop at 120 grit. Coarse grain helps to hide sanding scratches.	Good. Challenging to make dark without using a multiple-step staining process.	Oil-based: Adds a warmer golden tone. Water-based: Color becomes pale and washed-out.
<b>White Pine</b>	Pore size: None—coniferous. Location: NA Glass-smooth finish: Filling not required.	Heartwood: Pale tan. Sapwood: Pale tan.	Slightly darker and more golden brown.	Easy. Stop at 150 grit. Low density makes sanding go faster.	Mediocre. Prone to blotching. (c) Earlywood is much more absorbent to stain and finish than latewood.	Oil-based: Adds a warmer golden tone. Water-based: Color remains light.

**Notes: a)** The appearance of virtually any species of wood can vary widely, so exceptions to the notations will surely occur.

**b)** The preferred choice for color (heartwood or sapwood) is listed first.

**c)** Long-term exposure to direct sunlight causes many woods to fade.

**d)** Minimum final sanding grit for a clear varnish finish.

**e)** Wood conditioner minimizes blotching and specking, but makes the wood difficult to stain dark without using a multiple-step staining process.

**f)** Describes kiln-dried walnut. Air-dried walnut heartwood is medium brown with red and gold highlights.