

Table 21-1: Wood Planing Guide (Continued)

Wood Characteristics Chart

Wood	Characteristics	Planing Tips
Maple (Rock)	Hardness: Hard Grain: Distinct Workability: Fair	Watch for curly grain pattern and bird's eyes. Planes easily when grain is straight.
Oak (Red)	Hardness: Hard Grain: Distinct Workability: Fair	Pay attention to grain direction. Chips badly if cut against grain.
Oak (White)	Hardness: Hard Grain: Distinct Workability: Difficult	Has same characteristics as red oak.
Padouk	Hardness: Hard Grain: Distinct Workability: Difficult	Extremely hard wood. Limit depth of cut to 1/32" and feed rate to SLOW. Orange saw-dust stains hands and clothing.
Pine (White)	Hardness: Soft Grain: Faint Workability: Easy	Tends to chip out around knots.
Pine (Yellow)	Hardness: Medium Grain: Faint Workability: Fair	Stock alternates between hard and soft. Knives must be sharp to avoid chipping.
Poplar (Yellow)	Hardness: Soft Grain: Faint Workability: Easy	Tends to fuzz slightly if you cut against grain. Planes very easily.
Purpleheart	Hardness: Hard Grain: Distinct Workability: Difficult	Extremely hard and brittle. Pay attention to grain direction. Chips if cut against grain. Purple dust stains hands and clothing.
Redwood	Hardness: Soft Grain: Faint Workability: Easy	Clear boards plane easily.
Rosewood (Indian)	Hardness: Hard Grain: Distinct Workability: Difficult	Extremely hard, dense wood with curly grain. Limit depth of cut to 1/32" and feed rate to SLOW. Wear dust mask-sawdust is toxic!
Spruce	Hardness: Soft Grain: Distinct Workability: Easy	Clear wood planes easily.

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Wood	Characteristics	Planing Tips
Teak	Hardness: Hard Grain: Distinct Workability: Difficult	Extremely hard, dense wood. Limit depth of cut to 1/32". Wear dust mask-sawdust can cause an allergic reaction.
Walnut	Hardness: Hard Grain: Faint Workability: Fair	Watch for buns and knots. Tends to chip. Wear dust mask-sawdust can cause an allergic reaction. Dust stains hands and clothing.
Zebrawood	Hardness: Hard Grain: Distinct Workability: Difficult	Extremely hard, dense wood. Limit depth of cut to 1/32". Pay attention to grain direction. Chips badly if cut against grain.

Table 21-2: Planer Feed Rate Chart

12" Thickness Planer*				Professional Planer			
Depth of Cut	Board Width	Feed Rate* * *		Depth of Cut	Board Width	Feed Rate* * *	
		Hardwood	Softwood			Hardwood	Softwood
1/64"	0-4"	10	10	1/32"	0-4"	10	10
	4"-8"	10	10		4"-8"	10	10
	8"-12"	10	10		8"-12"	10	10
1/32"	0-4"	10	10	1/16"	0-4"	10	10
	4"-8"	10	10		4"-8"	3	6
	8-12"	9	7		8-12"	* *	* *
1/16"	0-4"	10	10	3/32"	0-4"	9	10
	4-8"	5	5		4-8"	* *	* *
	8-12"	* *	* *		8-12"	* *	* *
3/32"	0-4"	6	9	1/8"	0-4"	4	10
	4-8"	**	1		4-8"	* *	* *
	8-12"	* *	* *		8-12"	* *	* *

NOTE: These are maximum recommended feed settings for clear, straight-grained woods. If your stock contains knots, figured grain, or is unusually dense and hard, you will have to adjust these settings downward.

* If the Thickness Planer is mounted on the Mark V set the speed dial to "T" (4100 RPM).

* * Not recommended.

* * * Feed Rate: Feet per minute.

GETTING THE SMOOTHEST POSSIBLE CUT

The cutterhead speed and feed rate combine to give you a certain number of cuts per inch (cuts/inch). Generally, as the cuts per inch increase, the planed stock becomes smoother. To raise the number of cuts per inch, increase the cutterhead speed and decrease the feed rate. To calculate the exact cuts/inch, use this equation:

$$\frac{\text{RPM} \times 3}{\text{SFPM} \times 12} = \text{Cuts/Inch}$$

You'll also find your planed stock gets smoother as you take shallower cuts. A shallow depth of cut does not lift the wood grain as badly, and it reduces the risk of chipping or tearing out hunks of wood.

To get the smoothest possible surface on your planed stock, reduce the depth of cut to 1/64" or less on the last pass through the planer. Increase the cutterhead speed one to two letters and decrease the feed rate to SLOW. If the planer slows or stops during a pass when the feed rate has already been adjusted to SLOW, turn off the machine immediately. Lower the table and remove the stock. Try the pass again with a shallower depth of cut. If that doesn't help, try a slower cutter-head speed (Mark V mounted thickness planer only).

GENERAL THICKNESS PLANING

Measure the thickness of the board you're about to plane at its thickest point. Then adjust the table so that the depth of cut pointer is exactly indicating the thickness of the thickest part of the board. Always make your first pass at "0" depth of cut. This will even out any inconsistencies in the thickness of the stock.

If you're planing long or heavy lumber, have a helper ready to feed or receive the stock. If you can't find a helper, place one or two roller stands out 1' to 4' from the infeed and/or outfeed tables. Make sure these stands are adjusted to precisely the same height as the table; then remember to readjust them each time you raise or lower the table.

Turn on the planer and set the cutterhead speed and feed rate; then turn the machine off again.

Take a comfortable stance to either side of the infeed opening, as near to the planer power switch as possible. Turn the planer on and let it come up to speed. Hold the board parallel to the sides of the table; then feed it forward until the infeed roller grabs it (Figure 21-5). Continue to support the board as it feeds into the planer, but do not push or pull it through the machine. Let the rollers do the work.

Always turn on the planer and let it come up to speed; then feed the stock into the machine. Warning: Never turn on the planer with stock already under the cutterhead or feed stock into the

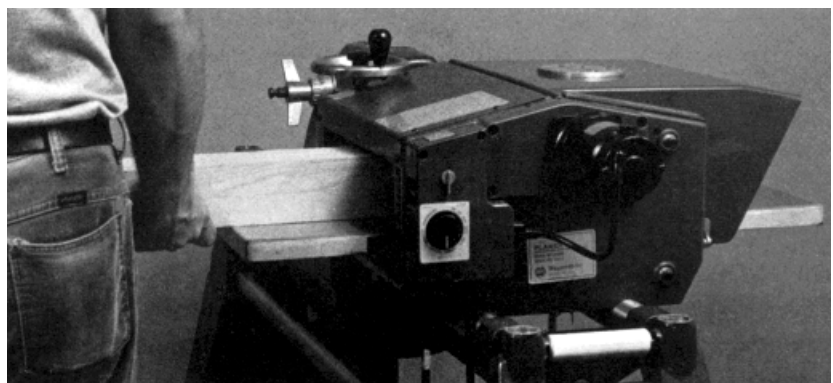


Figure 21-5. To feed a board into the planer, hold the board parallel to the sides of the table; then push it forward until the infeed roller grabs it. Continue to support the board as needed, but do not push or pull the board once the rollers are feeding it through the planer.