

## Wood Finishing & Refinishing

### Fact Sheet #6

# SANDING

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You might spend many hours staining, finishing, and polishing, but if the beginning surface has any trace of roughness, not enough sanding, or sanding across the wood grain, the stain and final finish will only emphasize all the bad points.

## Types of Abrasives

There are two kinds of abrasives used in smoothing wood. They are steel wool and sandpaper.

### Steel Wool

There are two reasons for using steel wool instead of sandpaper. They are: (1) to preserve the patina, and (2) to prevent sanding through a veneer.

Steel wool should be used to smooth a wood surface that has a beautiful color caused by age. It's called patina. By using steel wool to carefully smooth the wood surface, you can take out the rough spots without sanding through the patina.

Fine steel wool should also be used on thin veneer. Veneer is a layer of wood glued to another piece of wood. Sometimes it is paper thin. If you use sandpaper, you could easily sand through the veneer and have an unattractive wood showing through.

Anytime you use steel wool on bare wood, especially oak, be sure to clean the steel wool particles off the wood piece. First, use a vacuum to get rid of the steel wool fibers. Then wipe the wood surface with a tack rag. Any steel wool particles left on the wood surface can make a permanent rust stain in the wood when it interacts with chemicals used to finish the wood furniture piece.

### Sandpaper

The other type of abrasive used in refinishing wood is sandpaper. Sandpaper is a general term used to describe flexible sheets of paper or cloth coated with natural or synthetic abrasive particles. The size of the abrasive particles determines the grit size. To determine the grit size, look on the back of the sandpaper. The higher the number, the finer the abrasive. The lower the number, the coarser the abrasive.

There are four kinds of abrasive sandpapers often used in wood refinishing. Some are more efficient than others. They are flint, garnet, aluminum oxide, and silicon carbide.

**Flint.** It is a dull off-white abrasive. It is a poor sandpaper for refinishing furniture because it cuts through the wood slowly, clogs easily, and quickly loses its grit. Though inexpensive to buy, it will end up costing you more than any of the other papers in terms of time, temper, and surface quality.

**Garnet.** This paper is a reddish abrasive paper that is hard and sharp. During use, the abrasive particles fracture enough to offer new unused cutting edges.

**Aluminum Oxide.** It is a tan or reddish brown color (the tan color looks like flint only not quite as dull). This abrasive is not as hard as silicon carbide, but because of its massive or chunky grain structure, it is tougher and has less tendency to fracture. This is the most common sandpaper used in wood working.

**Silicon Carbide.** It is black and is a very hard, sharp abrasive. It is recommended for quick and efficient cutting of the wood surface. The silver paper has a white powdery lubricant added to the black particles. This is used when sanding surface finishes to avoid clogging. When purchased in a fine grit, it is excellent for buffing between finish coats. Silicon carbide comes in a wet/dry waterproof sandpaper and it has a full coating of sharp, fast-cutting particles that are nonscratching when used with water or oil. Silicon carbide is slow in clogging and offers fine finishing results.

**Table 1. Uses of Steel Wood According to Grade**

Grade	Classification	Common Uses
0000	Super Fine	Smooths between finish coats and final coat
000	Extra Fine	Removes spots, smooths between finish coats
00	Fine	Smooths veneers and preserves patina
0	Medium Fine	Removes old finish
1	Medium	Removes marks
2	Medium Coarse	Removes residue of paint and varnish remover
3	Coarse	Removes residue of paint and varnish remover

**Table 2. Uses of Sandpaper According to Grit Size**

Grit	Classification	Uses
600–500	Super Fine	Polishing
400–360–320	Extra Fine	Sanding between finish coats and final coat
280–224–220	Very Fine	Sanding between finish coats and final sanding on hard woods
180–150	Fine	Final sanding on soft woods and preliminary sanding on hard woods
120–100–80	Medium	Preliminary sanding on rough wood
60–50–40	Coarse	Rough sanding to remove paint and finish

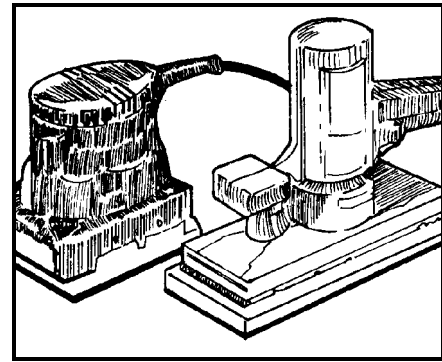
# Sanding

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## Electric Sanding

Sanding can be done by machine or by hand. A power or electric sander undoubtedly provides the fastest sanding. However, you should practice with a power sander before using it on fine furniture.

There are only two type of power sanders you should use when refinishing wood. (See Figure 1, Vibrating and Finishing Sanders.) They are the vibrating and the finishing sanders. They both give in-line strokes with the grain of the wood. The vibrating sander gives very short, fast in-line strokes, which will result in beautifully smooth surfaces. The vibrating sander is excellent for the final sanding. The finishing sander is the best for all around use. When using the finishing sander, be sure the abrasive paper moves back and forth in the direction of the grain of the wood.

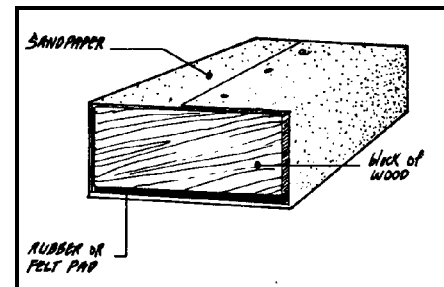


**Figure 1. Vibrating and Finishing Sanders**

## Hand Sanding

Even though power sanding does a good job, many wood refinishing experts recommend that the very last sanding be done by hand. Also, the power sander does not fit in places such as crevices, grooves, around chair lets, and so on. Therefore, it becomes necessary to sand by hand.

For successful hand sanding, use some form of backing support other than the fingers or the hand, or you will get uneven sanding. To get even sanding support, either purchase or make you own sanding block. To make your own sanding block, cut a piece of wood 2" x 2" x 4". The size depends on your hand grip. Glue a 1/4" thick sheet of foam rubber or felt to the bottom of the wood block. The foam pad will make your sandpaper last longer. Some people use a blackboard eraser covered with sandpaper as a sanding block. (See Figure 2, Sanding Block.)



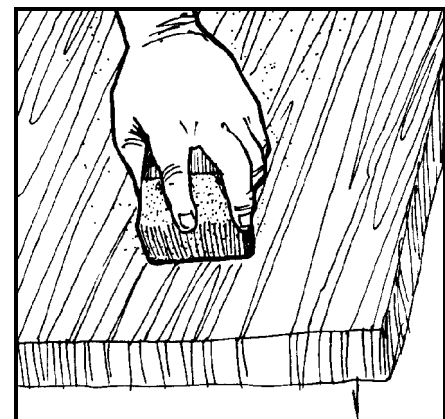
**Figure 1. Sanding Block**

## Sanding Pointers

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When sanding, the following pointers will help you do a better sanding job:

- 1. If you have wood grains that run into each other and go in different directions such as inlaid wood or the point where two pieces of wood meet, be sure to cover the wood NOT sanded with masking tape to prevent sanding across the gain.
- 2. Always sand with the grain of the wood in even strokes and pressure. (See Figure 3, Sanding with Grain.) Sand a piece of furniture until it is the same degrees of smoothness all over. The smoothness can be checked by rubbing nylon hosiery over the wood

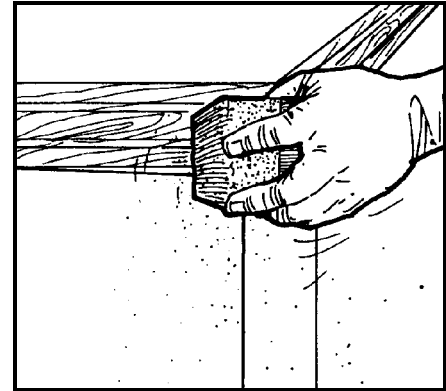


**Figure 3. Sanding with Grain**

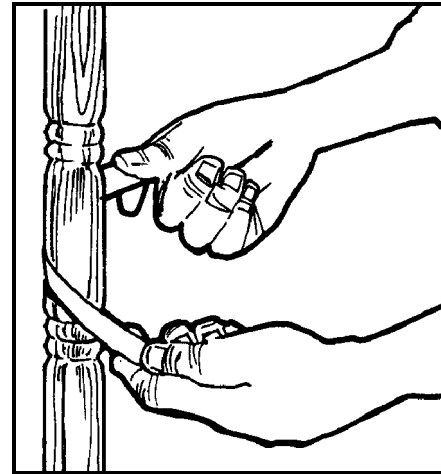
surface. If the hosiery gets caught on the wood surface, it may need more sanding.

- 3. On the end grain, use a sanding block and sandpaper to rub across the end section. (See Figure 4, Sanding Edge.) This will take a lot of sanding. But do not over sand or the end will not take the stain.
- 4. For curved areas such as turnings, legs, or rungs, use 000 steel wool or emery cloth cut into narrow strips. The steel wool forms to the shape of the wood piece. The emery cloth strips can get into grooves otherwise missed. Use the emery cloth as though you're polishing shoes with a cloth. (See Figure 5, Using Emery Cloth.)
- 5. For grooves or crevices, fold a square of sandpaper into quarters. Cut one fold to the center. Then, fold the sandpaper over itself. This will keep the sandpaper from slipping. (See Figure 6, Folding Sandpaper to Get into Crevices.)
- 6. If the wood surface is in bad shape, start with 100–150 grit size sandpaper, then work up to the finer grit papers such as 220 and 360. If you start with very fine paper, it will take you longer to smooth out the rough spots.

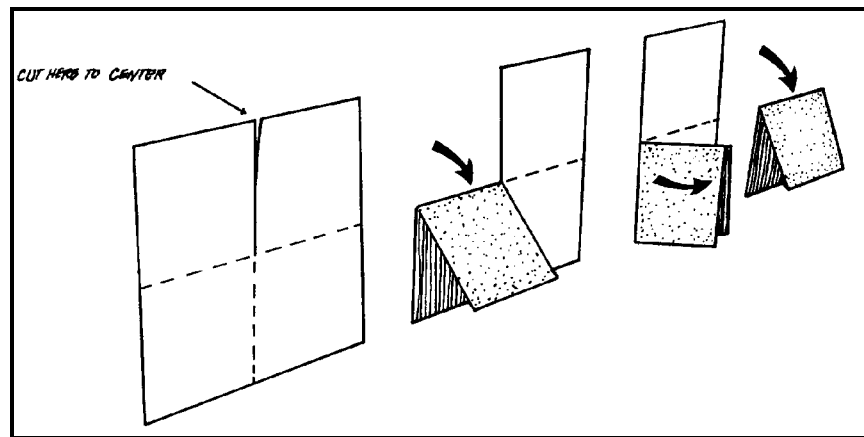
7. If the wood surface is in good shape but still needs a little sanding, start with 180 or 220 sandpaper. If you have a soft wood such as pine, fir, or poplar, then the final sanding should be with 180 grit sandpaper.



**Figure 4. Sanding Edges**



**Figure 5. Using Emery Cloth**



**Figure 6. Folding Sandpaper to Get into Crevices**

- 8. Use steel wool on veneer to avoid sanding through the thin veneer.
- 9. Lightly sand where the flat surface piece meets the end and side grain. These edges are often missed. If lightly sanded, the edge will absorb less stain and be more resistant to cracking and splitting.
- 10. When sanding, do not extend your strokes too far past the edge, or you will cause the edge to be rounded.

- 11. After sanding, clean the surface. A vacuum cleaner does a good job of removing large particles. Next, use a tack cloth or a cloth dampened with paint thinner to pick up the finer dust. Directions for making a tack rag are found in fact sheet #1 (HI 21).
- 12. Use the coarsest grit sandpaper appropriate for the wood. Then move to the finer grits to avoid over-sanding. Using sandpaper that is too fine too early in the process will remove the softer wood between the annual rings, leaving a rippled surface.

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