



WOOD SURFACE PREPARATION

The key to a successful refinishing job is the preparation of the surface. The wood surface must be smooth and clean; since any scratches will be more noticeable after the finish is applied than they are in the bare wood. Never use sandpaper on an antique. The surface preparation procedure you follow depends on the characteristics of the wood piece and the stripping (if any) procedure you followed.

Sanding

The majority of the surface preparation should be performed with steel wool. There will be cases, however, when it will be necessary to use sandpaper. If you are working with new wood which has never been finished, it is necessary to sand the wood to get a smooth, even surface. Sanding will also be necessary if the grain of the wood has been raised during stripping.

If you must use sandpaper, read this section carefully. Sandpaper is defined by the type of abrasive used and also the size (or grit) of the abrasive particles. The major types of abrasives include:

1. Aluminum Oxide - very hard and durable abrasive grains good for sanding metals and hard woods.
2. Garnet - abrasive grains have very sharp edges, but they are not as tough as aluminum oxide grains. Good for all woodworking operations.
3. Flint - least expensive sandpaper. Flint has sharp edges but dulls fast because of low toughness and durability. Good for woodworking operations.
4. Emery - hard but dull particles that cut slowly resulting in a polishing action. Generally not recommended for use on wood but can be used for final smoothing operation.

The USA system for identifying abrasive grain sizes (grit) range from 12 (coarsest) to 600 (finest). In woodworking, the grades from 120 to 400 are commonly used. Choose the proper grit size for the task. Sandpaper coarser than 120 is not recommended for wood; it will make deep scratches. For the preparation of wood surfaces for finishing, open coat sandpapers are recommended. These have open spaces on the sanding surface (abrasive grains cover on 50-70% of the paper.)

Hand sanding is recommended; do not use power sanders of the circular or orbital type because they create small scratches across the grain. (Power sanding is recommended, however for removing the

finish on hardwood floors and may be desirable to speed up the wood preparation steps on other wood items. If you need to use a power sander, use one that will sand only in the grain direction. However, be careful, a power sander will remove a lot of wood in a short time.)

For a successful sanding operation, follow these basic steps:

1. Always use a backing block for hand sanding - wrap your sandpaper around a flat block of wood or similar material.
2. Using moderate pressure, sand only in the direction of the grain.
3. Change the sandpaper often. If the abrasive becomes clogged, it will not function properly and may scratch the wood.

Surface Preparation for Various Wood Conditions

If the stripping process is done carefully with the proper chemicals, very little surface preparation will be necessary.

1. If the wood surface feels smooth after stripping and has no scratches, rub the surface briskly with grade 0 steel wool until it feels uniformly smooth. Then repeat process using grade 00 steel wool.
2. If the wood surface feels smooth but has noticeable scratches, you need to make a decision. Any effort to remove these scratches will alter the "patina" of the wood.
 - a. If the scratches are small and shallow, try removing them by carefully (with light pressure) sanding the surface with very or extra fine sandpaper (grit size of 180 to 240). Use a sanding block to insure you keep the surface flat.
 - b. If the scratches are relatively deep, you must decide if you would rather preserve the natural aged look of the wood surface and consider them character marks or remove them. If you decide you must remove them, proceed as follows:
 - 1) Carefully sand entire surface of piece with an abrasive paper of grit size 120 until the scratch has been eliminated.
 - 2) Sand next with grit size 160.
 - 3) Sand next with grit size 200.
 - 4) Sand next with grit size 240.
 - 5) Final smoothing with steel wool grade 00.
3. If the wood surface has very deep scratches or gouges, you may want to fill them with a synthetic wood putty or filling compound. Use one that matches the color of the stain you

will be using (if any) as most fillers will not pick up stain. However, remember you will never get it to look like the original wood.

4. If the wood surface is in good condition but feels slightly rough, it will be necessary to sand the surface lightly with an abrasive paper of grit size 240. Follow this with a hand rubbing of grade 00 steel wool.
5. If the wood surface of an old (but not very valuable) piece is in very poor condition (rough, badly scratched, gouged, etc.), or if you are working with a new wood (such as a piece of unfinished furniture), it will be necessary to do rather extensive sanding. Start with grit size of 120 followed by 160, 200, and 240. Then perform the final smoothing with grad 00 steel wool.

After the wood surface has been prepared to your satisfaction, carefully brush the surface with a stiff bristle or fiber brush to remove all traces of sanding residue and steel filings. This is specially important for oak as chemicals in oak will react with metal filings causing a stain on the wood. Follow this by wiping the surface with a rag dampened with denatured alcohol. You now are ready to begin the finishing process.

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