

Hammer Veneering

Veneer the whole world, without clamps

by Tage Frid

Hammer veneering is the old way of applying veneers to solid wood or to a plywood ground. The main tool is a veneer hammer, which is not used for hammering at all, but for applying pressure. The hammer has a very narrow face, so you can transmit the strength of your arms and the weight of your body to a tiny area of veneer. The veneer is held down by hot hide glue, which sticks as soon as it cools. You spread the hot glue on the ground surface and the veneer, then you use the hammer to squeeze it down tight before it cools. You can reheat the glue, and soften it, with an iron. Hammer veneering is usually the easiest way to fix old furniture with missing or broken veneers, or air bubbles under the veneers.

Hammer veneering is very fast to do, but the big advantage is that you don't need a veneer press or cauls or clamps. In regular methods of veneering, the size of the work is limited by the size of the veneer press or of the clamps. But with hammer veneering you could veneer the whole world if you wanted to. The same rules apply, however: When you veneer one side of a piece of wood, you have to veneer the other side too, or else the piece will be pulled concave toward the veneered side as the glue dries.

When veneering plywood, always cross the grain direction of the face veneer and of the ground layer. You can use some angle other than 90°, as long as the grain of the veneer and the grain of the top layer of plywood don't run parallel. If they are parallel, the veneer will crack later on. If your veneer

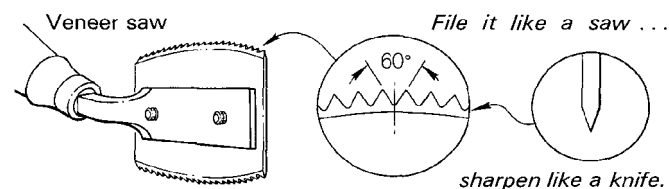
is applied to solid wood, be sure the grain does run parallel so the two layers of wood can move together.

Equipment

You will need a veneer hammer, a veneer saw, a hot glue pot (or double boiler), animal glue, a brush and an iron.

Veneer hammers vary in design, but usually have a long handle and a hardwood wedge for a head, with an inset aluminum or brass strip, which is the working face. The face must be straight and about 3½ in. wide, with a rounded profile to squeeze the veneer along a thin line. If you make your own hammer, follow the dimensions in the sketch and use a hard, heavy wood such as maple. Don't use steel or iron for the face, because it would react with the tannic acid present in most woods and cause a stain. Before using a new hammer, soak it in raw linseed oil so the glue won't stick to it.

A veneer saw or knife is used to cut the veneer to size. It is called both a saw and a knife because it is filed as a saw and



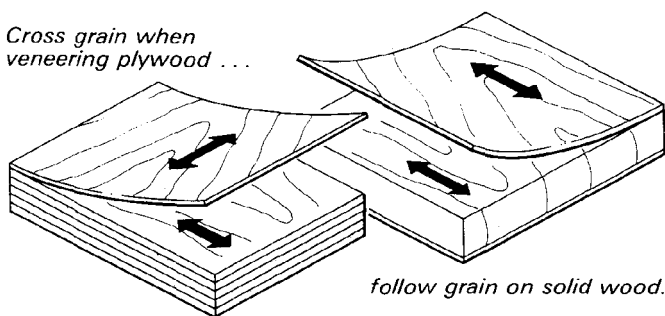
sharpened as a knife to make a smooth cut for edge-joining veneers. The curved blade of the saw is only about 3 in. long. Both sides of a veneer saw can be sharpened with a small triangular file. I file all the teeth at 90° to the surface of the blade, with no back or front, so that I can use the saw in either direction. This makes a slower but smoother cut.

After the teeth are filed sharp, the blade is sharpened so the cross section is like a knife, by rotating the saw along its curve against a stone. Hold the blade at a shallow angle, but be careful not to lose the points on the teeth.

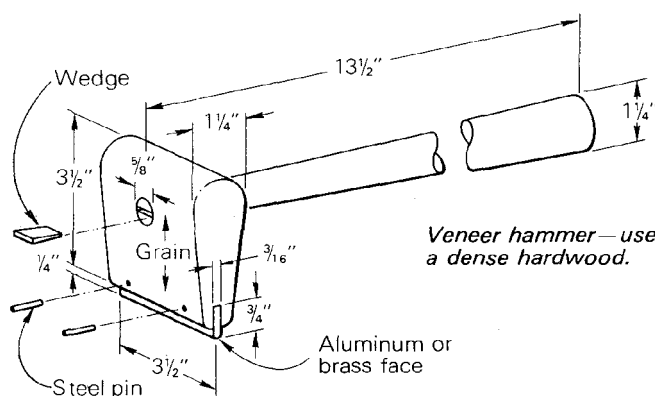
A hot glue pot is a double boiler with a thermostat to prevent the glue from boiling. I don't use contact cement. I have seen too many failures, and it is just about impossible to repair. For large surfaces where veneers have to be edge-joined, contact cement could not be used. Contact cement has not been on the market very long, so nobody knows how long it will last. Hot glue is the oldest glue—it goes way back to the Egyptians. It is made from animal hides, bones and blood. It can be bought in dry sheets or as pearls. It must be soaked in water to soften it. Once it is soft, pour off any excess water. Then heat the glue in a glue pot or double boiler. Never put the pot directly on the heat source. It must always be over a pot of water. If hot glue boils it loses its strength, plus when it boils it doesn't smell like roses. When starting a new batch,

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Cross grain when veneering plywood ...



follow grain on solid wood.



Veneer hammer—use a dense hardwood.

melt the glue, let it cool and reheat it again and it will be ready to use. If the batch is already made up just heat it up and add water if it is too thick or let it heat for a while if it is too thin. Getting the right consistency is something you have to learn through experimenting. If the glue is hot all day its consistency changes constantly. If the consistency is right, the glue should drop from the brush like honey. You will know the glue is spoiled if it stays liquid after it cools.

To check that the glue is made correctly and is ready to use, put a drop between your fingers. Rub your fingers together, applying pressure. You should be able to squeeze out all the excess easily after about one minute if the room is around average temperature, 60° to 70° F. Your fingers should then start sticking together, because when hot glue gets cold it starts binding. The glue won't reach full strength until it dries completely, which takes about 24 hours.

Edge veneering

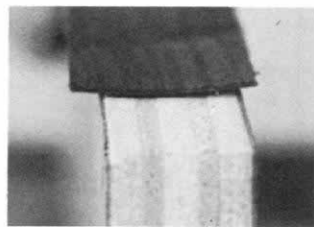
It is clumsy and time-consuming to veneer edges using clamps, but it is fast and easy to do it with the veneer hammer. It doesn't matter whether the edge is straight or curved. When you cut veneer, always have a flat piece of scrap wood underneath it to prevent cutting into the workbench, and use a straightedge to guide the saw. Cut strips of veneer only about $\frac{1}{8}$ in. wider than the thickness of the work. If you cut them too wide, the excess sticking into the air will dry before the glue has cured and it will curl away from the wood.

When the veneer is cut, wet it on both sides to make it more flexible and also to see which way it naturally wants to arch. Glue it with the concave side toward the work, so the arch will keep it in place. If you do it the other way, it will be hard to keep the edges stuck down while the glue cures.

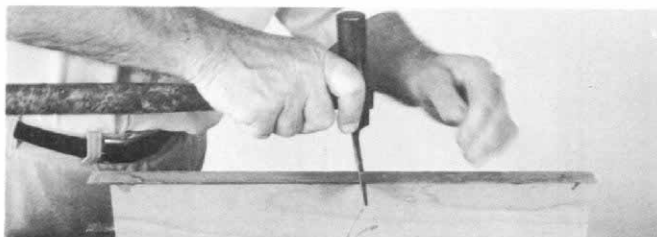
Begin by brushing glue onto the edge to be veneered, then turn the veneer over and lay what will be the outside surface right in the glue on the wood. Then brush glue onto the veneer. The glue that smears on the outside will help the hammer slide more easily. Later on you can scrape the veneer clean. Now flip the veneer over and hold it in place with one hand. Hot glue is very slippery. Hold the hammer in your other hand and press down hard to squeeze out the excess glue at one end. This will secure the veneer, and now you can put both hands on the hammer to squeeze out the excess glue all along the edge. You have to work fast to get all the veneer down while the glue is still hot. The minute the glue gets cold, the veneer will stick. Keep an old iron warmed up and handy. Then when you aren't fast enough, you can reheat the glue before going back with the hammer. Don't have the iron so hot that the glue burns, or you'll regret it. Burned glue makes an unpleasant stink that hangs around for a long time.

Use the veneer saw to clean off the extra glue and trim the veneer, while the glue is still soft. First dip the saw blade in hot water so it will be wet and warm and the glue won't stick to it. Then cut off the excess at both ends, holding the work up on an angle. After that, stand the work on edge and tilt it a little to apply pressure right at the corner, and saw off the excess veneer. Dip the blade in hot water after each cutting. Now put the piece aside to dry for about 24 hours.

It doesn't make any difference if the edge is curved or some other shape. Veneer it exactly as if it were straight. But when the work isn't straight, you must wait until the glue is hard and dry to remove the excess veneer and squeezed-out glue. Then use a block plane or a smooth plane to clean it off.



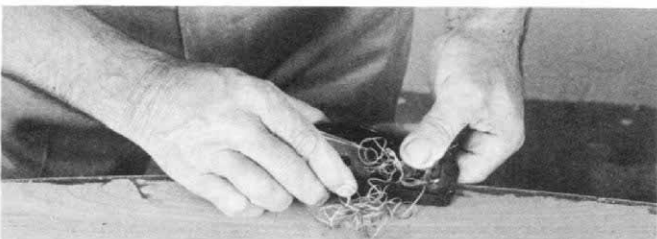
Wet the veneer to see which way it curls, then glue the concave side down, right, so the arch will help hold it in place.



Use the veneer hammer to squeeze out the glue all along the edge.



When trimming veneer, keep the saw warm and wet by dipping it in the glue-pot water. Stand the work on edge and tilt it a little to apply pressure, then draw the saw along the face of the board.



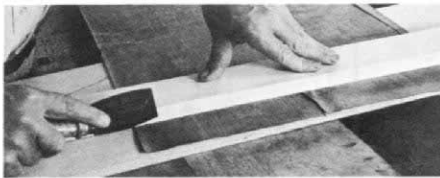
To trim a curved edge, let the glue dry hard, and plane.

Veneering large surfaces

To veneer a large surface, you will have to edge-join pieces of veneer either lengthwise or crosswise, or both. The edge joint must be very accurate. I ensure accuracy by overlapping the two pieces of veneer by about a half-inch at the joint, and after they are stuck down I cut through both pieces at the same time.

Begin by figuring out how you want the veneers to match and mark the location of each piece on the work. Then work on one section at a time. Wet the veneer and brush the hot glue onto the work. Place the moistened veneer upside down in the glue, exactly as when edge-veneering. Apply glue to the veneer itself, flip it over and put it in position, and use the hammer to secure it somewhere in the center.

Now use the warm iron to remelt the glue under a small section of the veneer. Push down with the veneer hammer as hard as you can, using the weight of your body, to squeeze out the excess glue. When that part is glued down, move to



Saw veneers to length with straightedge, backup board.



Lay veneer face down in glue. The glue that smears on it will help hammer slide easily.



Lean your whole weight on the hammer, squeezing the glue toward the edges.



With both sheets stuck and the seam trimmed, reheat with the iron and push hard with the hammer to squeeze the excess glue out through the line of the joint.



Saw through both veneers at once, carefully lift top sheet and peel away scrap beneath.



A hot iron remelts the glue in a troublesome spot. Then go over it with the hammer.

the next area. Heat the glue, press the veneer down, and proceed until the whole sheet is stuck tight. Work the hammer back and forth with the direction of the grain of the veneer, starting in the center of the width. But turn the face of the hammer at an angle so it will squeeze the excess glue toward the edges. Never work across the grain, as that would push the fibers apart and cause the veneer to crack when it dries.

Now apply glue to the next sheet of veneer and proceed in exactly the same way, making sure the edges to be joined overlap by about a half-inch. When they are both stuck, use a straightedge and a sharp, warm, wet veneer saw to cut through both sheets at once. Remove the scrap veneer from the top, then carefully lift up the top sheet and pull out the scrap from underneath. Then butt the edges together, heat with the iron, and push hard with the hammer to squeeze all the excess glue out through the line of the joint. When the joint is down tight, press a strip of heavy brown paper over the joint to prevent it from opening during drying. After the glue has dried, use a sharp scraper blade or a cabinet scraper to remove the paper and excess glue. But turn a heavier burr than normal on the blade ("The Scraper," Spring '77, p.29). A good seam should be invisible.

You must be sure there are no air bubbles under the veneer. If you can't find the bubbles when you push with the ham-

mer, tap the surface lightly with your fingernail and listen for hollow spots. If you don't get these hollow spots glued down, they will eventually crack. The veneer I used for these photographs was very curly in one spot in the center, and it would not stay down. So I heated the area to melt the glue, covered it with brown paper, and clamped a block of wood over the curly place to hold it down tight while the glue cooled and dried. If you don't notice the air bubbles until several days or months later, just apply water, heat and pressure to work the piece down. The glue will still hold. □



Block and clamp hold curly spot down while glue cools; strip of heavy paper along seam keeps it closed until glue dries. Then a sharp scraper cleans off paper and glue.