gluing up Large Panels

Approaching panel glueups in a different way can save you time and effort and give you better results.

Most case projects built from solid wood start with gluing up and surfacing the wide panels needed to make the parts. And the success at this stage can determine how the project goes from there on out. If your panels are smooth, flat, and accurately thicknessed, the rest of the work gets much easier.

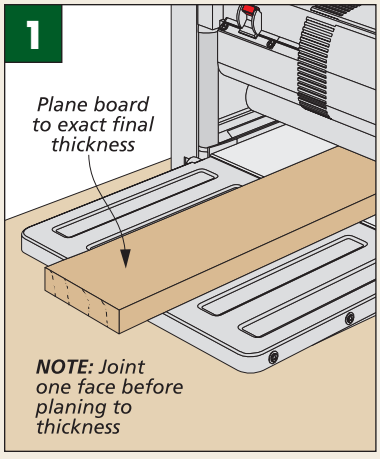
The usual procedure is to glue up a panel to "rough" thickness and then surface it to your specs. If you have a wide planer or a drum sander in your shop, this is easy to do. But most of us don't have this luxury. And in this case, the work of surfacing a panel after glueup can be a trial. The tedious hand-planing, belt sanding, or scraping can make you think about taking up a less strenuous hobby.

REVERSE THE ORDER. To get my projects off to a smoother start, I tried approaching panel glueups from a different angle. I simply reverse the order of things. Briefly, the technique goes like this: I start by surfacing all the boards to final thickness. Then I lay them out, joint the edges, and very carefully glue up the panel one joint a time. This "extended" glueup allows you to concentrate on getting each joint perfectly flush, flat and tight. Admittedly, the process of gluing up all the joints takes a little longer, but you easily recoup time by having to do very little cleanup to the panel afterward. And the panels usually turn out flatter, smoother, and better looking.

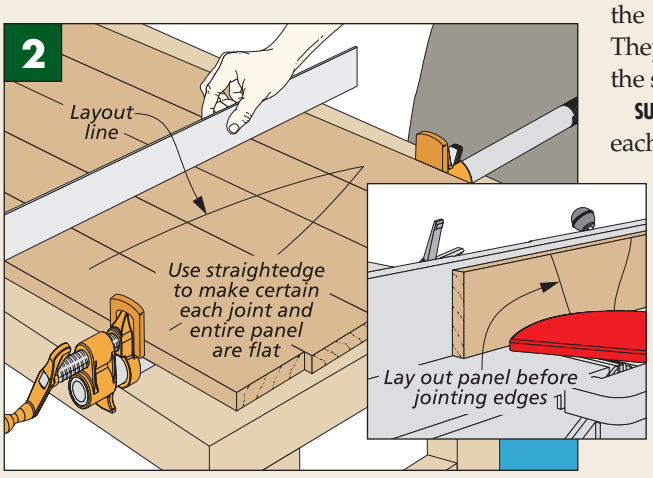
FIRST, THE BOARDS. I start by choosing stock for the panel and cutting the boards to rough width and length. You want a couple of inches extra length in the glued up panel and an extra inch or so in width for final sizing. It helps to start with the straightest boards possible. They don't have to be perfect, but the straighter the better.

SURFACE. Next, I joint one face of each board and then plane them to final thickness. Normally, I would leave the boards a little thick for "post-glueup" surfacing, but not here. You want the thickness to be dead-on (Figure 1).

LAY OUT THE PANEL. Once all the boards are planed, I take them to the bench. Before I joint the edges, I do a little mixing and matching of the pieces. I have two goals that sometimes require a compromise. You want



Plane First. *After cutting the boards to rough length, plane them to the final thickness of the panel.*



Joint and Dry Clamp. *After laying out the boards and jointing the edges of the boards, dry clamp the panel and use a straightedge to check it for flatness.*

to arrange the boards in the panel to achieve the best figure and color match, but you also want the panel to be flat and straight.

If your boards are all pretty straight, you can arrange them strictly for appearance. But more often, a board or two is slightly bowed. This can be straightened by placing the board in the center of the panel, using a straight board on either side to counteract the bow.

I always place a straight board at either edge of the panel, then any bowed boards go to the inside. If two bowed boards have to be placed side by side, reverse the bow in each piece so it cancels out.

JOINT & DRY CLAMP. When I'm satisfied with the lineup, I mark the order of the boards and take them to the jointer (Figure 1). After jointing each edge, the next step is to dry clamp the panel to make sure that the joints are tight, lie perfectly flat, and are also easy to align (see Shop Tip below). It pays to check each joint as well as the entire panel with a straightedge, as in Figure 2. You don't want any humps or dips at the joints. If you need to rejoint an edge, do it now, before you start gluing up the boards.

GLUE ONE JOINT. When the panel passes the dry clamp test, you can get ready to glue up the first joint. I like to start at one side and work my way across the panel.

Figure 3 shows the clamping arrangement. First I lay out a series of clamps and adjust them to the width of the boards. I also prepare an upper set of clamps to alternate with the lower set. You'll need to have pads on your clamps or cauls ready to protect the jointed edges.

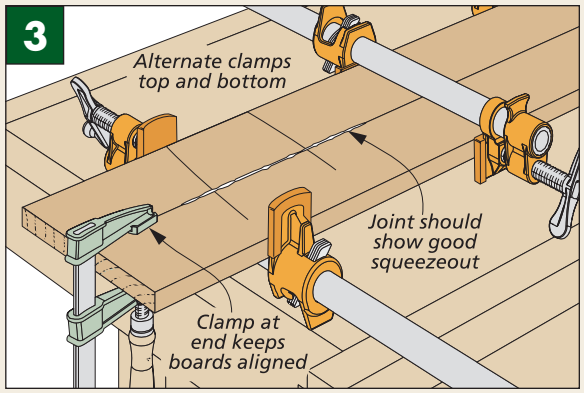
After spreading glue on one edge, align the boards on the clamps and rub them together. There should be enough glue on the edge to keep the boards in contact.

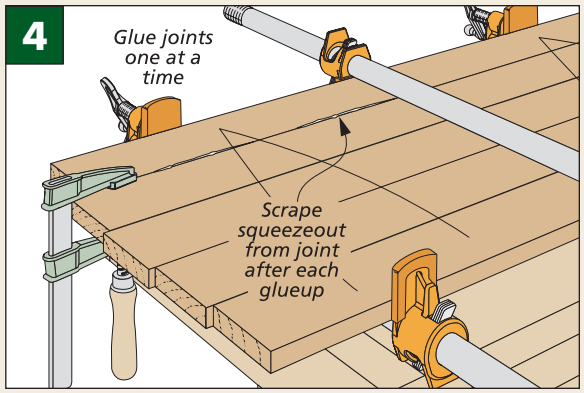
END CLAMPS. Before tightening the main clamps, I add a small clamp at each end to keep the two boards flush. Then I add the upper clamps and begin to tighten all the clamps. Remember, you're only gluing one joint so don't overdo it.

CHECK FOR FLUSH. While the clamps are being tightened, I'm feeling the joint for flush. If you find an offset along the joint, a dead blow mallet can be used to force the high side down. You may have to loosen the clamps to get the boards to move. If you find a hump or dip with your straightedge, adjust the clamps to change the pressure. Since you're only gluing one joint, it's not a panic to make these adjustments.

A SHORT WAIT. The next step is to wait while the glue sets up. This doesn't take long. After about 30 minutes, the joint will be strong enough to loosen the clamps and add another board. At this point, I also scrape off the gummy glue squeezeout (Shop Tip below).

MORE OF THE SAME. The next joint goes just like the first. Again, the key is to make sure the joint is dead flush and lies flat. And you simply repeat the process until you've completed the panel (Figure 4).





FINISH UP. I let the panel sit for several hours before the final step. When the clamps come off, I simply pick up a hand scraper and spend a few minutes removing any remaining glue squeezeout and touching up the joints (main photo, opposite). A little fine sanding finishes the job.

To me, this technique proves that a little patience and planning can sometimes eliminate the need for a lot of hard work. W

Shop Tips: Biscuits and Scraping Soft Glue

▲ If you think you're going to have trouble keeping long or bowed boards aligned, adding biscuits to the joints can help.

◀ Scrape the joint before adding the next board and the gummy glue squeeze-out will come off cleanly and easily.