REVISIONDIVISION
SALVAGE INSPIRED DESIGN

Miterless Frames or Corner Joints Without Angled Cuts

It can be very difficult to get miters on a frame true and tight . Certain tools and a certain amount of skill are required to get the job properly done. Even than, it is often just a matter of time before the miter opens up again. The nature of wood is to expand and contract by taking on or giving off moisture. The miter joint can be overpowered by this movement and opened up again, showing unsightly cracks.

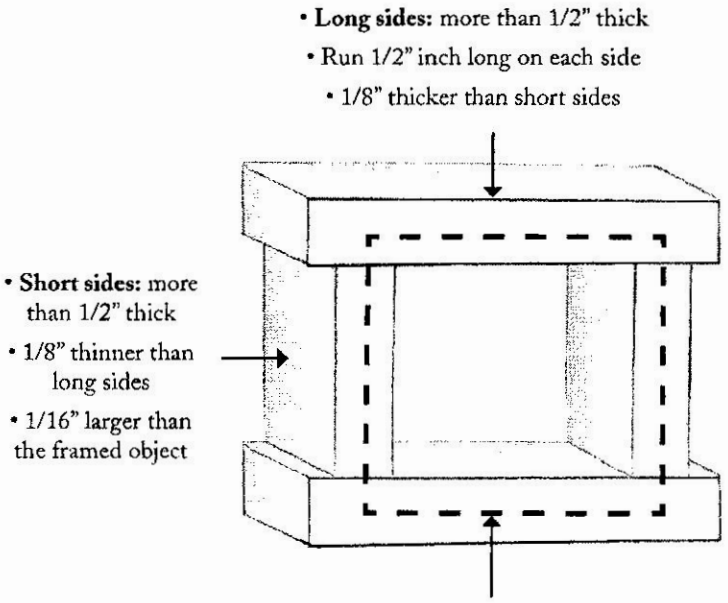
One way around that problem is to steer clear of mitered corners and use more stable, easier to cut and ,yes, more "forgivable" joints that "hide" unavoidable imperfections, yet can actually add appeal. This information sheet will discuss two techniques, **layered butt joints** and **corner blocks**.

1.) Layered butt joints:

Let us assume that we are going to frame a rectangular object, such as a mirror, flat wall art or a piece of glass/ceramic. A good framing material source would be leftover trim or shorts from a molding bin. Almost any profile and any width will work. But most important is the thickness:

The material for the two short sides has to be at least ½" thick. Cut it squarely to the exact length of those sides plus 1/16" for a comfortable fit of your object.

The material for the two long sides has to be about 1/8" thicker. The "shadow line" from the two different thicknesses of framing material can make it looks nicer and gives you more play where it meets at the corners. Cut it squarely to the combined length of those sides plus the combined width of both of the short sides plus 1" extra: side a + side b + 1 inch extra



Tricky? Just try to lay all your material around the four sides of your object and have the thicker framing pieces hang over the thinner framing pieces by ½" on each end. You will see, that's your frame.

Now, find a piece of 3/8" or ½" plywood and cut it squarely 2" larger overall than the object to be framed. Lay your object on top of it so that you have a 1" margin all the way around. Outline your piece with a pencil onto the plywood and put the object aside.

Using the plywood as your backing, you will now attach the framing pieces with screws and glue to this backing. Pre-drill the screw holes with even spacing (at least two holes) in the 1" strip of the plywood between the pencil line and the edge.

Apply a thin bead of wood glue along one of the outside margins of the plywood, lay one of your thinner pieces there, clamp it, turn it over, pre-drill through your prepared holes into the back of your framing pieces (use a slightly smaller bit than the diameter of your screws) and put your screws in. You will need screws that are shorter than your combined thickness, of course. Trimhead screws (small head, square drive) work very well, since their heads sink nicely into the back of the plywood and are out of the way.

**Note: The thinner your framing pieces are, the less wood there is for the screws to hold on to. That's why it is good to keep the framing sides substantial: 1/2" thick or more.*

Now proceed with the other short side. Be extra careful that you stick exactly to your pencil lines. You can always grab your object and lay it on, just to be sure it fits (maybe have up to a 1/16" room).

The two longer and thicker framing pieces are next. They should be centered over the shorter sides and protrude by even margins. Glue and screw in the same fashion.

Now, get your object and put it onto the plywood, into the frame. If it is a mirror or ceramic tile, you might be able to call it good and done by glueing the object down with a construction adhesive like "Liquid Nails" or a similar product.

To hang your piece on the wall, drill screw holes through the framing pieces from the outside. The screw heads can either just show (nice brass works well) or can be hidden by dowel plugs.

Creating a Frame with Removable Glass

Look for some ¼" or ½" square strips of wood, or cut some using thin wood from a scrap bin. Well, you could even use some thin straight branches. You will need at least two strips for two of the inner edges to use as stops to hold the glass and your object in the frame.

After cutting your strips squarely to length, you will fit them snugly in place. If you want to use stops all the way around and, again, want to avoid miters, you just apply the same principle as for the outer frame pieces: mix up your thickness and you will achieve a designed, clean and intentional look.

Instead of attaching the thin stops with screws, though, it is best to use little brass or copper nails called escutcheon pins. Pre-drill in evenly spaced nail locations (at least two) with a slightly smaller bit than the diameter of the pins before fastening the strips with careful hammer strokes. Don't use glue and you will be able to remove the stops if need be.

Make sure, that you catch the plywood backing as well. You can then find studs or use sheetrock anchors if the object is heavier than a half pound or so.
Note: The frame will appear to "float" on the wall, due to the spacing the plywood backing is giving. This will give the framing job a special look.

If you want to frame something see-through and the plywood backing is spoiling the effect, you can challenge yourself to a backing of your framing pieces by just strips.

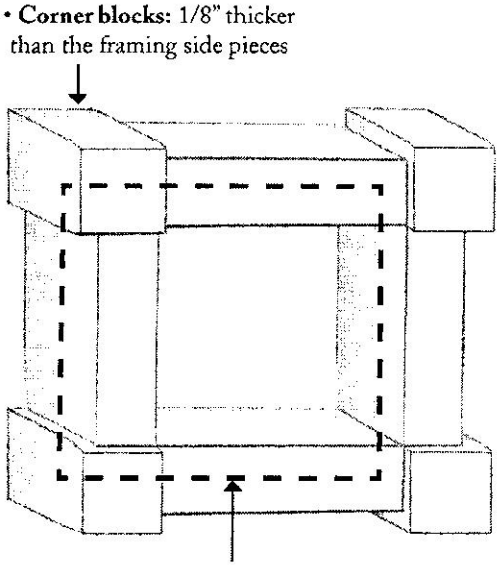
Attach some strips (could be solid or ply) to the back of your short sides. They need to overhang the ends by enough, that you can lay, glue and screw the longer sides to it. They also have to overhang the inner edges of your framing pieces by a ¼", so that you create a rabbet where your object can rest against.

2.) Corner blocks

If you have read the descriptions of how to built the layered butt joint frame, understood the principle of plywood backed construction and, even better, have tried it, you will see, that the corner block method is actually an almost easier version of the same.

Corner blocks are placed, as their name indicates, into the four corners of your plywood backing. They have to be about 1/8" thicker than the four framing pieces and wider by ½" then the adjoining sides, so that they can be standing above the plane of the framing sides and have an overhang at the outsides. However, since they are the transition from one side to the others, all the four side framing pieces themselves can be the same thickness. The attachment of the corner blocks to the plywood backing works the same as with the side pieces. It may be good to be extra careful in pre-drilling and screw fastening the blocks, because the smaller a piece of wood is, the easier it can crack.

All the other aspects of the construction are the same.



Plywood backing (dotted line) applied to back of frame where all pieces sit flush together on the backing materials. Diagram view is of the front of the frame, where corner blocks sit "proud" by 1/8"

There you go. Have fun. Mix the versions up and come up with interesting collage-type framing pieces, which don't have to be just one piece. The plywood backing sets you free to "piece" the pieces together! Almost anything goes, including other than wood materials and even little shelf/tray protrusions in place of one of the sides.

Bonus Project - Frame becomes Serving Tray

If you use the frame as a serving tray, let's say, and you wish to hide the plywood edge, you can glue and escutcheon nail strips of wood to that edge. Thicker strips then the ply are o.k., because they will function as a little seating frame. Additionally, you can fasten little feet (i.e. cabinet knobs, wood blocks to the bottom).

That's it. All the rest is up to your imagination.