

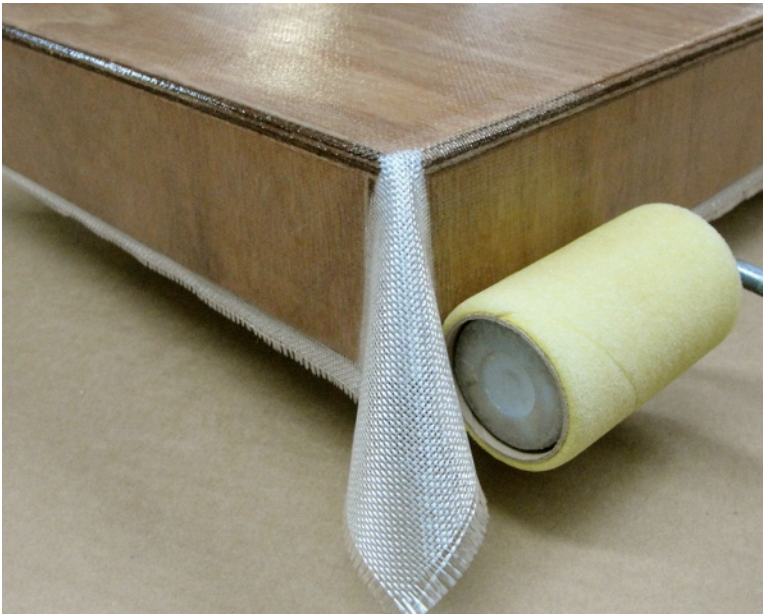
Glassing Edges & Corners



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Russell Brown

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GLASSING EDGES AND CORNERS

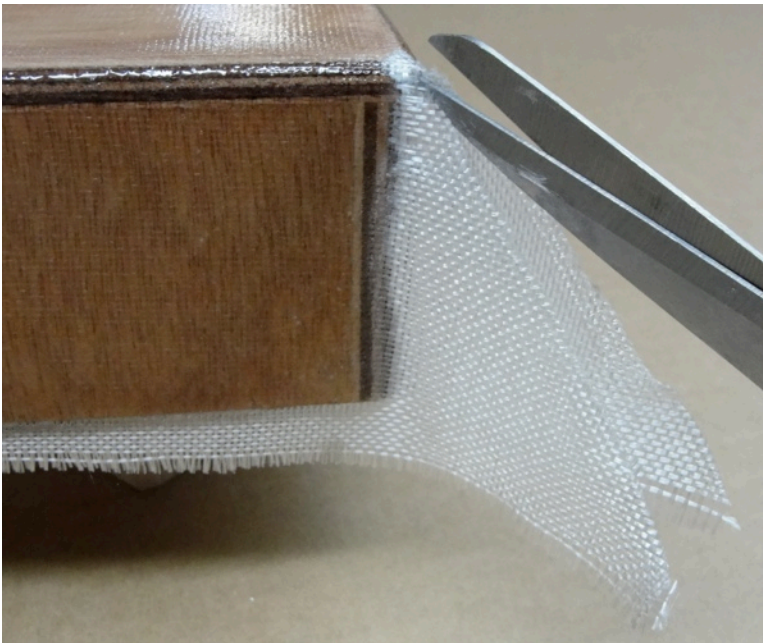
Edges are vulnerable areas in wood/epoxy construction.

Because end grain plywood absorbs water easier than elsewhere, a small nick through the glass on an edge will cause fiberglass “zippers”, where swelling wood can cause the fiberglass to fail.

The treatment of corners and edges could merit a whole book, (our building manuals are full of info) but here we’ll just cover some of the methods that we use.

Fiberglass can conform to some crazy shapes (see next page), but it can’t wrap over sharp edges or corners.

If you are using a router to round the edges, a 3/16” round over bit will make about the smallest radius that glass can wrap around. A 1/4” radius (shown) will make glassing easier.



The outside corners of this hatch lid are shown being glassed.

- (1) The top surface and edges are wet out first.**
- (2) Sharp scissors are used to cut down the middle of the fold, cutting all the way to the top surface.**
- (3) One edge is held out of the way while folding the other edge around the corner with a wet roller.**
- (4) The second edge is wrapped around the corner with the roller.**



This example has rounded corners.

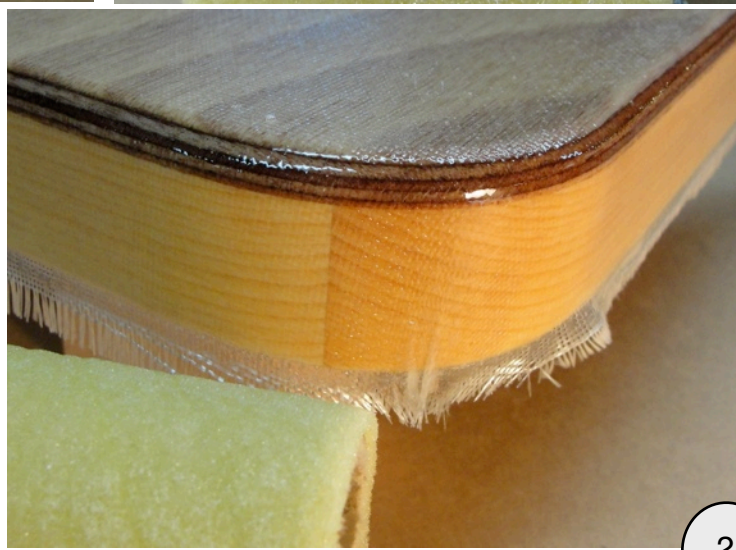
The trick with getting glass to conform to edges like this (without cutting and overlapping) is to cut away all excess cloth before wetting the cloth (second photo).



The reason the cloth is able to conform to these corners is that the fibers *at the corner* are on the bias.

Experimentation with scrap cloth will show that fiber orientation will make glassing a complex shape either possible, or impossible.

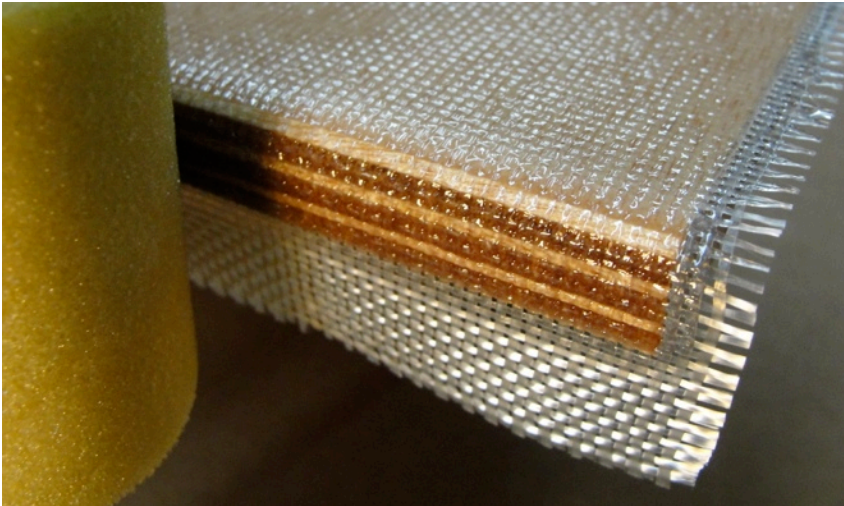
A small rectangle of cloth with the fibers running parallel to the edges will not conform well, (try wrapping it around your fist), but the same size rectangle with the fibers on the bias will easily wrap around just about anything, as long as it doesn't have sharp edges.



Often it's not possible to glass both sides of something at one time. Glassing one side at a time means the glass overlaps on the edges, but the cloth must be carefully trimmed with the knife and sanding block *on a rounded edge*.

The router (same round over bit, same bit depth) will trim the glass nicely too.

Tip: If the glass tries to lift away from an edge, thicken a tiny bit of epoxy with 406 colloidal silica (make it thick), lift the cloth and rub a small amount on the edge (with a gloved fingertip) and put the cloth back down. This works wonders, but can cloud the transparency.

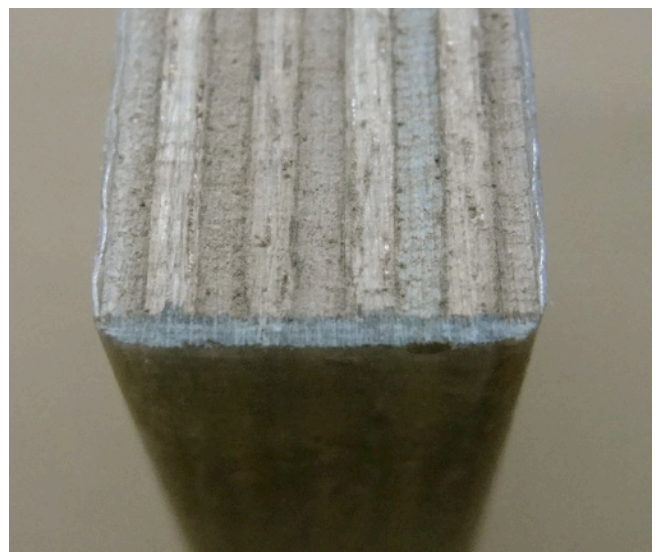


On some edges it's not practical to round a plywood edge and wrap glass around it, so here we "cap" the edges with multiple layers of cloth, then trim them flush with a knife and sanding block.



This method, cutting narrow strips of cloth and laminating them onto the flat edge with a roller makes a pretty tough edge, but the finished edges must stay fairly sharp. The more layers used, the tougher the edge... and also the harder to trim.

Warm with a heat gun (and trim the following morning) to make trimming easier.

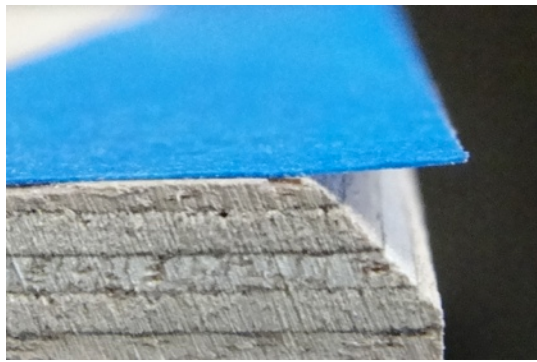


A new epoxy from WEST SYSTEM® called G-FLEX® could offer alternative methods for toughening edges. We haven't used this product in this way, but have read that it can be applied to areas like oar and paddle blade edges in multiple coats (without glass) and the result is an edge that can be whacked hard enough to dent the wood without damaging the epoxy coating.

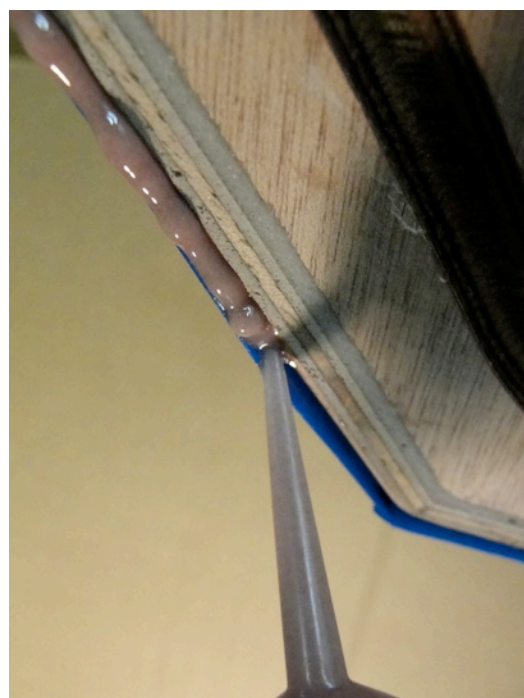
Our two-piece dinghies must have sharp and very tough hull edges at the joint between the hull-halves.

We chamfer the sharp hull edges with a sanding block and then laminate two layers of masking tape (to make it stiffer) and apply it as a dam for injecting with epoxy.

We fill these dammed chamfers and block sand flat before glassing the hull and bulkheads, so that **the glass on both faces covers the filled corner** (photo's at bottom).



As you can see, this technique can be used on complex corners. We use high density fillers to thicken the epoxy which makes block sanding flat a bit of work, but the finished corner after glassing is very tough.



Both faces are glassed (separately). capping the filled corner.

