

**Re: [RV7A] Fiberglass basics sought**

Hi Bob,

You'll need a quart of West Systems epoxy, the fast cure hardener (provides plenty of time to work) the metered pumps, 410 micro filler, 30 minute epoxy from a hobby shop or home store. (Get the 5 or 6 oz bottles) Rage auto body filler, Everycoat 416 glazing compound. (Mark the pumps with a Sharpie for half travel as well)

I do not like using the sheets of glass and cutting strips. These are tough to work with especially when you haven't worked with glass much.

I recommend contacting [www.cstsales.com](http://www.cstsales.com) and ordering fiberglass tapes. For all of my tail work I used 1" wide tape. For the front of the windscreen I used 1", 2" and 3" tapes.

For the tail glass, cut the flange on the glass so the piece will fit flush to the part you are working on. Make sure the glass isn't hitting on the rib when it is in place.

Sand the flange and an area about 1.5" from the joggle with at least 100 grit paper. Also sand the inside of the glass, the inside of the metal pieces, and an area about 2" from the edge on the outer skin.

Cut some strips of .032 for backing strips on the inside of the glass. Rough these up and epoxy in place. Clamp in place. Clean with acetone first.

Fit the piece, drill and cleco. If you haven't dimpled the skin yet, don't. If you have you'll need to countersink the glass. I used a Dremel with tapered stone. If you use a countersink bit or deburring bit it will be worthless for metal when done.

If you haven't dimpled you can countersink the metal for the CS4 pop rivets with a deburring tool. Do this until the rivet is flush. The CS4-4's have a very thin head that doesn't take much to countersink.

When done and ready to attach for good, mix a batch of West Systems and 410 filler into a near peanut butter consistency. You will only need one pump of epoxy and one pump of hardener for this.

Butter the joggle with the mix, attach and piece and cleco in place. Pop rivet in place. Use a credit card or similar material to clean off all of the epoxy that has been pushed out. Use the epoxy to fill any low areas.

When cured, block sand to clean the joint. Use some of the 30 minute epoxy with micro filler to fill any significant low areas or gap in the glass/metal joint. Sand when cured.

Use the 1" glass tape and cut a piece that overhangs the TE. For the rudder for example cut this piece to go to the rudder horn. Cut another piece to go around the LE. Use a half pump of epoxy and hardener and thin with acetone or alcohol. Be sure to use a container that won't melt. Clean the pieces again with acetone.

Brush a coat on the pieces to wet the area. Don't over do it. Now lay the glass tape on the piece and center over the gap. Brush the epoxy on the tape to to make it wet. Again, don't over do it, just get the weave wet.

When cured lightly sand the tape and the edges. Mix a small amount of Rage with the hardener. It doesn't take much hardener. A half dollar sized puddle only needs a BB sized amount of hardener to make it go off in less than 10 minutes.

Use a squeegee or credit card and fill the edges of the tape and any other low areas. Pretty simple. When cured, block sand. If you have any significant low areas use Rage. When you are down to final small areas to fill, use the 416 filler.

This process may take a few mixes. It is not hard to do. Work till you are satisfied.

This process works great, is very light, and extremely durable. If you have prepped properly your bond will last the life of the plane.

If you have any other questions feel free to contact me. This is not the only way but it is the way I do it based on years of dealing with composite materials in a variety for nearly 30 years.

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