

Bradley Oliver

From: Dan Checkoway
Sent: Thursday, October 27, 2005 1:05 PM
To: Brad Oliver
Subject: Re: Resin / Filler Question

My 2 cents is -- rivet the tips on, get the gap as tight as you possibly can, and then leave it. Stew on it while you build the rest of the plane. If, by the time you're doing other glass work and filling work, you can't live with the riveted look, then you can always fill.

If you have any intention of keeping the plane polished, I wouldn't fill the gaps. Much easier to deal with polishing if you have a crisp line, rather than primer "to about here" like I have it, primed over the aluminum that got scuffed & sanded.

I would wait. You may change your mind about a lot of things over time.

For glassing, I use 1oz "deck cloth" from Spruce as one layer to bridge gaps. I use 3oz cloth from Spruce to do light build-ups of fiberglass. I use 8oz Rutan BID cloth from Spruce to do heavier, more structural stuff. I use the West System 105/205(206) resin/hardener system.

For filling, I've used all sorts of crap...

- epoxy + microballoons (a.k.a. "glass bubbles") for cosmetic filling
- epoxy + flox for "structural" filling
- SuperFil
- Rage Gold
- UV Smooth Prime (pinholes, crevices, rivet heads, etc.)

Rage is a polyester and is by far the quickest drying, easiest sanding, easiest to make the most progress in a shorter time. But if you have the TIME and don't mind slightly more sanding, I would always lean toward an epoxy based filler like SuperFil or West System epoxy mixed with yadda yadda.

The polyester/epoxy *compatibility* thing has more to do with the resins you use on fiberglass layups. For example, you do NOT want to use a polyester resin when laying up glass over an epoxy based structure, whereas you can use epoxy over polyester, vinylester, etc. Ask a composites expert if you're unsure.

As for fillers, it's much less critical. The thing about polyester FILLERS is not compatibility, but rather that they supposedly "shrink." Bondo, for example, will definitely shrink. Rage and Rage Gold are supposed to be among the better polyester fillers, and I've seen no shrinking whatsoever after 650+ flight hours and many times "left outside" in brutal sun/rain/what have you.

If you use West System epoxy + micro or flox or whatever to do filling work, I highly recommend using the FAST hardener. Use the SLOW hardener when you're doing larger glass layups that will take a fair amount of time to get in place (i.e. lots of plies, large areas, etc.). When filling, you want that sucker to dry and harden ASAFP so you can start sanding. Even with the FAST hardener, using epoxy + yadda for filler usually means you'll be waiting 12-24 hours before you'll want to start sanding. This is why I went with Rage Gold in the end. Rage [Gold] also penetrates better and is easier to deal with all around. It is perhaps not the ideal formula, but it is a good compromise for finishing/feather filling in my opinion.

UV Smooth Prime is awesome for a finish filler. You can apply it with a razor blade to really fine work, or you can brush it on with a foam brush or foam roller. I've used it with no cross-linker in very tiny applications.

In larger applications (i.e. more than just one rivet head), I always mix it with the cross-linker in the appropriate volume ratio (measure carefully).

That's my brain dump. YMMV.

)_(Dan

----- Original Message -----

From: "Brad Oliver">

To: "Dan Checkoway"

Sent: Thursday, October 27, 2005 12:37 PM

Subject: Resin / Filler Question

> Dan,

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> Sometimes the timing of these topics is perfect...

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> I am thinking about how I want to finish my fiberglass tips... meaning,

> if I want to glass and smooth the joint or just rivet and forget it.

> Anywhoo, I got a question that maybe you can help me with.

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> I am assuming that I will need to do at least some fiberglass buildup,

> such as around the front of the counterweights, and I was planning on

> using the industry standard West Systems stuff to do so. That being

> said, if I decide to go the extra step and cloth and smooth the joint

> between the fiberglass and aluminum, what resin and filler products

> would you recommend using? I did pick up a quart of Rage to fill an

> unrelated ding, but I haven't used it yet. I noticed you used Rage

> Gold to smooth (feather) the area you glassed, but I am curious about

> the epoxy/polyester compatibility issue, or maybe there is just a

> better way. Any advice?

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> Thanks as always!

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> Brad

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