

**Subject: [c-a] Vacuum bagging procedures and applications**

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[The Canard Aviators's Mailing list]

Having finished an RV-6 I have just started construction of a Long EZ and plan to use vacuum bagging procedures on most of the parts both flat and flying surfaces using methods a friend used during construction of a Defiant in the late 80s. Most of this is from memory of how he did it.

Two unsolved problems are how to avoid removing too much epoxy and preventing the glass from being pressed down into the irregularities of the foam surface displacing the wet micro.

The procedure for simple flat bulkheads is as follows:

On a smooth masonite tabletop prepare the foam core by coating with micro and apply the glass using the exact techniques you would for an open layup. You can even use a little excess epoxy to speed up the wetting of the glass. Use a piece of visqueen slightly larger than the part on top of the table to keep from bonding to it.

After the part is exactly like you would want it for a open layup, cover the entire piece with peel ply (1.7 oz peel ply works well which is just dacron) Lets assume we have a 3-ply bid surface. Wet out the peel ply by stippling and adding epoxy if needed to get it all wet and smooth.

Next cover the entire part with a layer of smooth felt to act as absorbent for the excess resin and to distribute the vacuum. It seems that for each ply or two of glass enough resin is released to completely wet out one ply of felt. Make sure the felt overlaps the entire part by a couple inches. With 3 plies of glass I would use 2 plies of smooth felt (just a guess at this point) or something like U Haul packing blanket material.

Now the fun begins.

Surround the assembly with a bead of strip caulk placed on the table surface that is used for caulking windows giving yourself a couple inches around the part. 100 feet for \$3.00 at Home Depot.

Cover the whole thing including the caulk with plastic sheet. 1.4 mil painters drop cloth or heavier works great for me on flat surfaces, when doing a wing use the nylon stuff that can stretch 400% without tearing.

On one end of the part I lay a nylaflo tube connected to a vacuum gauge across the caulk with a dab of caulk to seal around the tube. On the other end I connect it to my vacuum pump which is a very old ¼ hp pump type compressor that can easily pull 26" of Hg. I have a bleed valve to control it mounted on a T. With the valve open maximum vac is about 5" hg.

Open the valve to keep the vac down and turn on the pump. It is great fun to watch. All of the fiberglass peel ply and felt gets sucked down against the foam really hard and you can immediately see the felt get saturated with resin where the wet spots in the layup were. At about 10" of vac the surface is hard and firm with most of the felt getting wet out but still leaving a relatively smooth surface on the glass.

