

Covering With Polyspan - Conversations from SAMTalk

Out here in the California OT FF crowd, we're mainly using Polyspan these days--cheaper than silk (a lot cheaper) and tougher than silk.

Polyspan will work around limited compound curves. It does not shrink in water, so it's useless to put it on wet. It shrinks with heat, after you've got it stuck down to the framework.

Here's the common drill:-

Prepare your framework by sanding it as smooth as you would for a tissue or silk job. Put your preferred adhesive on the framework. Some people use two or three coats of dope, sanding smooth between coats, then apply the Polyspan using either MEK, Acetone, or dope thinner brushed through the Polyspan to activate the dope and "lock" the Polyspan to the surface. Others (and I'm one of them) like to use Superseam fabric cement or covering adhesive (one available from Aircraft Spruce and Specialty and the other from Aerodyne) and brush it on the framework. Let dry, then brush MEK, Acetone or dope thinner through the Polyspan to lock it to the surface.

After that brush three or four thinned coats of nitrate dope on the Polyspan. It will start to fill the grain and get a slight shine. At that point you can pull your heat gun out and shrink any remaining wrinkles out of the covering. Finish up with a couple more coats of dope and, if you need it, a fuel proofer.

If you've got a particularly curvy piece of the airframe, you can cut Polyspan in strips and overlap the edges, just as though you were planking a round fuselage. One of the good things about Polyspan is that you can sand these overlaps after you've got several coats of dope on them and they will tend to disappear. If you muff it and sand through the overlap to the bare framework, just cut a new strip of Polyspan, lay it over the bare spot, dope the new Polyspan to the same number of coats as the surrounding Polyspan and sand again.

Polyspan is white only; but there are several different ways to get color on it. Design Master Florists Spray available at Michael's Crafts is one good way; another method involves a mix of Higgins Ink, thinner and dope--1 part ink, 1 part dope, 10 parts thinner, and you spray it on until you get the color density you want. I've also colored Polyspan with plain old spray can Krylon Lacquer (this on a small towline glider called the Leprechaun). Nitrate doped Polyspan is pretty friendly to almost any kind of paint you want to put on it.

One final advantage of Polyspan for covering; you can heat shrink your trimming warps into the covered finished airframe--and the warps stay where you set them. Monocote can move if it's subject to too much heat--but I've never had a "set" Polyspan covered wing move on me (and it can get pretty hot in the car on late spring or early fall day at Lost Hills).

Mike Myers

Hi Mike, I have used Polyspan for years and your instructions should be included w/Polyspan. One thing - if you are bending it down to adhere to another surface iron the bend several times. Gene Wallock passed along a tip to me that at dihedral breaks etc. he trims it so there is some overhang and irons a crease in the Polyspan and then adhere to the side of the rib. Karl

Hi Mike,

I noticed you didn't mention using the heat gun for shrinking until;- After that brush three or four thinned coats of nitrate dope on the Polyspan. It will start to fill the grain and get a slight shine. At that point you can pull your heat gun out and shrink any remaining wrinkles out of the covering.

I have always done heat shrinking after locking the covering down around the edges and before the first applications of dope. Did you leave out a step maybe?

Ed Lamb in Bellevue, WA

When you cover with Polyspan, don't forget to have the shiny side out. The other side is fuzzy and the dope tends to raise the fuzz.

Here is another pretty good bit on Polyspan:

<http://www.modelresearchlabs.com/polyspan.htm>

Larry

Definitely!

I have been doping 2 small pieces of each roll - one on top/outside of the roll, the other on the inside - just to make sure I get the smooth side out! You will NEVER get the fuzzy side smooth - might be a good argument though to try that on the top of a wing. Cleanup won't be much fun, but the fuzz may make a good turbulator!

Also - on overlaps, try to avoid sanding until you have 5-6 coats of dope. If you sand too early or too vigorously, you will expose fuzzy fibers that also are hard to deal with. I've had more luck just using a Monocoat iron to make overlaps lay down better. Oh yes - on a square corner, use the iron to crease the Polyspan over the corner before using thinner or dope to adhere it - makes much nicer corners. You can also use the iron just before the thinner/dope dries.

BTW: Larry Davidson was selling really wide rolls of Polyspan at Las Vegas - you might contact him about that.

AL Lidberg

Have any of you folks use water based poly to seal the Polyspan? I have used it with great success on polyester fabric (Polyfiber) and assume ??? it will work on Polyspan - correct? Can not use the stinky stuff any more due to my respiratory problems.

Larry

The following is an excerpt from an [article](#) I wrote a few years ago entitled A Weight Comparison of some Lightweight Coverings. I compared the weights of the bare frameworks and of the finished covering jobs on the wings of 16 of my aircraft. However only two of my aircraft in the report were covered with Polyspan.

(The yellow and black Lanzo Bomber that Dave Harding now flies was one of them. The other coverings in my

report were Micafilm, Litespan, and Ultracote Lite). I found the average weights of the finished Polyspan

coverings (complete with dope, etc.) to be 3.67 grams/100 sq.in. However this figure varies quite a bit depending on the cement used for covering, and the number of coats of dope. I usually found I needed 4 or

5 coats of Nitrate to fill the grain before adding colour. Roy Bourke

Earl

Try Polyspan--You'll love it--I want to add a couple things here that haven't been covered--If you're looking for that translucent finish that you got with silkspan, put the first three of four coats of dope on quite thin--I

use 60% dope, 40% thinner--Use a foam brush to dope it--I use a 2 inch version--The foam brush will swell up from the thinner in the dope so only dip

the brush about 3/4 inch into your dope to charge the brush--Brush in one direction only always picking up the brush in the previous stroke that you laid

down--To make a neat job of going around the trailing edge of your wing, use your sealing iron to fold the polyspan around the edge--It will snuggle it right

in place before you attach it--You can go around some amazing compound curves with it also--Lift the polyspan above the surface and apply your sealing

iron in the middle of the surface--As you pull from the edge, you will feel it stretch as it's heated and at that point pull it down over the compound curve--

A little trial and error and you'll get the hang of it--I cover the tops of my wings in one piece right over the wingtips with the stuff completely wrinkle

free--Using a heat gun or sealing iron, you can shrink out some terrible wrinkles if need be--I also recommend doing your shrinking before you do any

doping--I dope my frame first with three coats of pretty thick dope and sand with 320 paper--I brush a mix of 75% thinner and 25% dope through the

Polyspan to attach it--One more thing, Polyspan has a grain of sorts--It runs along the long side

Hank on the Bay

No one has yet mentioned using UHU purple glue stick. I have been using it for about 10 years, ever since my late buddy Gerry Lafreniere used it and wrote an article about its use back in the February/95 issue of SAM 86 Speaks. He used it for 1/2A models, for gluing wind screens, as well as for

large and small rubber models. It's easy to use, has no smell, and although it sticks well, it's easy to remove with a little moisture or spit. It is water soluble, but after doping, I have never had a problem with high humidity or even a little rain. With this caution, I would never use it for an outdoor model with un-doped tissue.

Any other users out there?

As for the shiny side, Ed, that's a good test. I've always used one of my work bench lamps to look at the polyspan at an angle.

From: SteveB

I have found that edges of Polyspan can be easily turned over using an ultra fast drying cellulose type glue . I use UHU Hart available from Hobby Lobby. It is expensive but very useful for silk, silkspan and Polyspan work.

Pressing down the UHU through the Polyspan with a wet finger works also. I use spit.

From: Edwin D. Lamb

Very good point Jim! And it is really hard to see which side is more shiny. One way to be certain is to take a piece of velcro (the hook side) and scrub it on a scrap piece of the Polyspan. Do that on both sides of the scrap and the hooks of the velcro will lift some of the fuzz on one side, not the other. That side goes down, the other(shiny) side goes up.