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Fabricating glass sleeves for round wing joiners

<https://scalesoaring.co.uk/phpBB3/viewtopic.php?f=12&t=2320>

Re: Fabricating glass sleeves for round wing joiners

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by **Barry_Cole**

Posted: **14 Nov 2018, 13:58**

Mike Seale wrote: ↑14 Nov 2018, 12:37

I slid the whole lot into a piece of heatshrink and shrunk it tight.

Mike

Sealed up well you could say.....



BC

Re: Fabricating glass sleeves for round wing joiners

by **Mike Seale**

Posted: **14 Nov 2018, 12:37**

Thanks for sharing this technique. I have just made some tubes using this method with a slight modification...

1. I found that one layer of tape was more than enough to produce a tube that slides onto the rod easily. The first tube I made was a little too loose.
2. The glass I used did not drape very well and kept trying to unravel. To solve this I slid the whole lot into a piece of heatshrink and shrunk it tight. Not only did it hold it in place well but the finished tube (after the heatshrink was removed) was perfectly smooth requiring no sanding.

Mike

Re: Fabricating glass sleeves for round wing joiners

by **Jilles**

Posted: **24 Oct 2018, 04:27**

the release agent is for stopping the tape glued to the glass fiber, it makes it easier to remove the tape later. I used this release agent because I have plenty left over from other glass jobs that involved molds.

I suppose a thin layer of grease or Vaseline will do the same.

Re: Fabricating glass sleeves for round wing joiners

by **alibodin**

Posted: **23 Oct 2018, 23:58**

Jilles,

Many thanks for the clear steps on how to do this, I need to roll my own tubes to build two new wings. Please excuse my ignorance, I assume the release agent stops the epoxy sticking to the tape, what can one use for that purpose?

Thanks

Alistair

Re: Fabricating glass sleeves for round wing joiners

by **Jilles**

Posted: **23 Oct 2018, 03:24**

sl11 nearly there

sl12 finished and let cure for 24 hours

When cured after 24 hrs twist and pull the sleeve from the joiner, this requires some force, use a glove, you will find out why if you don't.

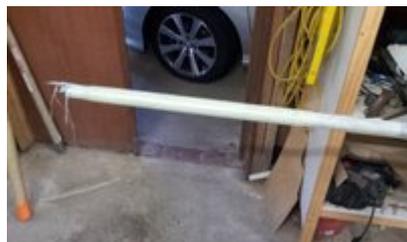
the paper and tape will stay in the sleeve. use a thin piece of timber or long screw driver to separate the tape and paper from the sleeve inside.

try the finished over the joiner. It will fit fine with just enough play.

use some sand paper to remove sharp edges from the sleeve outer surface. (that's why you used a glove earlier)

the reason the joiner overhangs my building board when applying the glass and resin is that I am very good in making a mess when working with liquids.

I have an old sheet on the floor to take the spills



This my way of making glass sleeves. the joiner rod/tube material is not critical I tried with grease on the joiner only, or just grease and paper. the result was a nice sleeve that was ridged to the joiner with no way to remove. My theory is that during the curing the glass shrinks making it a press fit.

the 3M tape made the difference it cushions a bit

Cheers

Jilles

Fabricating glass sleeves for round wing joiners

by **Jilles**

Posted: **23 Oct 2018, 03:07**

There was a question on Glider guiders how to make glass sleeves for wing joiners. This is how I do this for tube or solid rod joiners.

The sl# on each action refers to attached pictures.

sl1 cut a piece of thin butcher paper 100mm longer then length of required sleeve, with a width to suit the joiner circumference. a 2-4mm overlap is o.k, paper must be very thin.

sl2 wrap paper around joiner with grease .

sl3 Fit 3M Magic tape (3/4" or 19 mm wide) lengthwise on top of paper , 3 or 4 lengths are required subject to diameter of joiner. 2-4 mm overlaps.

sl4 get some release agent.

sl5 rub release agent on surface of fitted tape

s16 make some temp gadget so the joiner overhangs your building board and be able to rotate the joiner.

s17 cut a sheet of glass at least 50 mm wider then required sleeve length. the length of the glass sheet needs some calculations

I use 80gr/m² glass and prefer 1 mm thick sleeve wall . I need 8 layers of mentioned glass to get 1 mm wall. at say a 20 mm joiner the circumference lenght is 63 mm with 8 layers required the glass sheet needs to be 500 mm long.

s18 use your preferred epoxy or resin.



cut butcher paper



fit paper on joiner with grease



fit 3M magic tape



use release agent on top of 3M tape



applying agent



make some setup to turn joiner



cut wide an long enough glass



use preferred epoxy or resin



located glass with epoxy



slowly turn joiner while applying resin with roller

s19 place one end of the glass sheet on the joiner with epoxy or resin. make sure the side edges are perpendicular to the joiner.

s10 slowly rotate the joiner while adding epoxy or resin evenly with a roller. make sure air is pushed out and make sure it is even.

due to the limit of pictures per story see next episode to complete this manual.