

The art of rubbing

Whether it is an art or a science is for you to decide, whatever your view point there is no doubt it is a skill and like all skills it takes time to perfect.

Having guide coated your part, start rubbing with P1200 wet and dry using a hard flat block. Use soapy water and rub diagonally, +45deg then -45deg and then chord-wise (along the fuselage and then around the fuselage). This is to ensure that you get a flat surface. Pits, dents and other imperfections will become visible as you rub through the guide coat. Keep rubbing until the entire guide coat is gone.

Dry and apply another guide coat. This time rub down with a softer block using P1200. Rub chord-wise for wings and fore and aft for fuselages. Long smooth strokes will improve the final finish. It is this rubbing that will give you the full gloss finish. Keep the surface wet and clean and work evenly along the work. Over-lap old and new paper rubbing to reduce the difference in the cutting power of old and new wet and dry paper.

For the final finish rub with P1500 on a flexible rubbing block. Try balsa or hard foam as both work well. Finally place a bucket of water at both ends of the job and using worn paper walk backwards and forwards washing the paper at each end. This process will remove some of the chord wise scratches and improve the finish.

Polishing.

To get a really good gloss finish you will need to use a polishing machine. Most repairers use an Airflow Mop for this process. These can be obtained from us.

If you have one of the machines then you will be familiar with its operation. With new gel coat take care to keep the mop moving and let the area cool as heat will make the weave appear.

Alternately you can get good results with normal car type rubbing compounds such as G3. Take care not to get the new gel too hot as the weave from the glass below will start to appear. As the gloss improves water down the compound to slurry and the gloss will be further enhanced.

Finish by soft waxing with a good quality wax.

Buying the materials

Severn Valley Sailplanes can supply all the materials you need to complete the tasks discussed in this Weekend Workshop Booklet.

We also stock a full range of repair and maintenance materials to keep your glider in tip top condition.

We offer free advice to all our customers based on many years of experience

WEEKEND WORKSHOP SERIES

Restoring the surface finish on your glider

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Over time the surface finish of all new gliders shrinks. That is to say the pattern of the underlying structure begins to become visible through the gel.

This is a normal ageing process and is due to the through hardening of both the structural resin and that of the gel coat.

Overall the effects that this would have on the performance of most gliders is next to nothing, certainly less than would be due to not being centred in a thermal or being just off centre.

However the work involved in restoring the surface finish back to original is small in comparison with the long term benefits to the longevity of the gel coat.

Many believe that the reason gel cracks over time is due to small stress raisers in the surface of the gel created when the original gel was rubbed down and polished.

These cracks if left can grow and progress through the gel to produce the familiar gel cracking many owners have witnessed.

By sanding back the gel finish these cracks are removed and replaced with new shallower scratches with clean edges. The dirt and oxidation products are removed and the surface reactivity is restored.

In short cutting back and re-profiling can prolong your gel coat's life and at the same time keep your glider looking good.

Planning the work

Even a simple task like this needs to be planned if you are to produce good results.

You will need the following materials:-

2 x Clean buckets (buy new if possible)

Sponge, washing up liquid, paper towel.

P1200 and P1500 Wet and Dry paper.

Hard and soft rubbing blocks.

Red aerosol spray and cellulose thinner.

Trestles and fuselage support

Starting the work:-

Start by washing down the wing or fuselage you will be working on. Use clean water and dry off with paper towel or a leather. The whole of this job needs to be carried out using fresh clean water and materials at all times. If you introduce dirt or grit into the water or on to the cutting paper you will score the part you are working on and ruin your work.

Next mix a solution of red cellulose with thinner to produce a thin water like solution. This should be wiped over the surface you are about to sand back. Its purpose is to act as a guide coat. As you rub down so the surface imperfections will be highlighted by the red. Once all the red has been removed the surface is flat again. Excess red can be removed with thinner.

Rubbing Down

What could be simpler than rubbing down? It may look simple but like all things there are always tricks of the trade to ensure things go right.

Choosing the block:-

The surface of the gel is uneven that is why you are doing this work therefore you need to level the surface. Start by using a hard block. Rectangular section 2 x 1" aluminium is ideal for this. Match its length to that of the rubbing paper you are using. Our normal blocks are the width of the paper and we cut the paper into three along its length. This is a good size, as you can get both hands onto the block and there is an over hang of the paper to grip. On the second face of the block we bond a thin rubber. This is the soft side of the block and is used for final finishing.

If you use a wooden block beware that over time it will warp or distort preventing you from getting a level surface. Beware of those that advise using excessively long blocks 18" plus as these become unstable and troublesome due to the drag of the paper.

Choosing your paper:-

Like all things in life you generally get what you pay for and Wet and Dry paper is no exception. For many years we have used only 3M's paper because we get longer life, less tearing and good results.