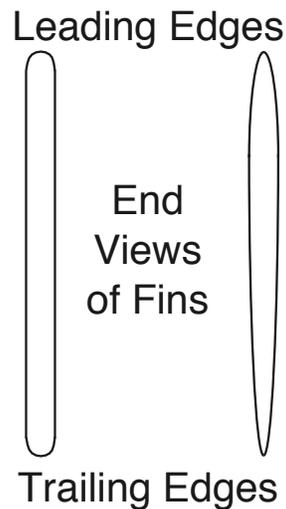


Tips for Using Pre-Cut G10 Fins

Our laser-cut G10 Fiberglass fins are very popular with competition rocketeers. The material is thin and very strong, but you do need to treat these fins a bit differently from a standard balsa or bass wood fin.

When you get them the fins may have some dark material on the edges due to the cutting process - you can simply rinse them off in water or with with a damp towel to remove any residue.

Even though the fin material is very thin, you can still airfoil them if you'd like for extra efficiency. This will make the fins more aerodynamic and allow your rocket to fly higher than it would if you just left the fin edges square. You can round both the leading and trailing edges, or further airfoil them by having the trailing edge come to a point (the airfoiled, or "teardrop" shaped fin is more aerodynamic than a fin that is just rounded). In either case, be sure to keep the root edges (the edges that will be glued to the body) square. The tip edge may be kept square or rounded. See the drawing below for an example (the left example is a rounded fin, the right example is an airfoiled fin).



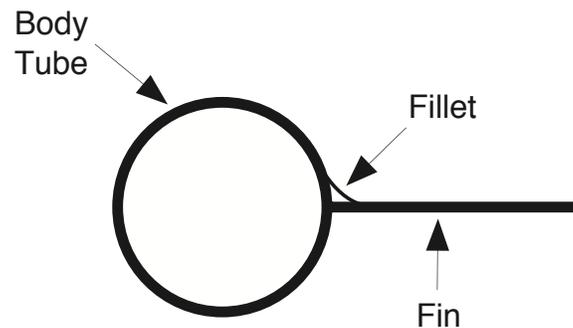
Using 220 grit sandpaper, shape each fin as desired - a sanding block may be used for this. If you don't have a sanding block, lay the sandpaper down on a flat surface and move the edges of the fin against the sandpaper. Be careful not to remove too much material at one time - roughly shape one side then turn the fin over and do the same on the other side. Continue this procedure with finer sandpaper 320 grit to further shape and smooth the fins until you are satisfied with their appearance. Repeat with even finer sandpaper (500 grit or finer) if desired.

Even if you decide not to airfoil the fin, you should run the root edges of the fins over a piece of 220 grit sandpaper just to be sure there are no minor irregularities.

As the G10 material doesn't have the pores of a wood fin, you cannot use wood glue to attach the fins to your body tube. The best choice is usually quick curing (thin) Cyanoacrylate ("CA") glue.

While holding the fin in place on the body tube, and being sure the fin is straight out from the tube, apply a small amount of CA to the joint where the fin meets the body. The thin CA should wick itself down the length of the fin root - if not you can use the end of a straight pin or a toothpick to pull it down the length of the root. If desired, you can spray with CA accelerator to cure the glue even quicker.

When all the fins are attached and properly aligned you should add glue fillets to further strengthen the attachments. You can use a medium or slow cure CA or epoxy.



If using CA, apply a drop at the root edge and with the point of a straight pin or a toothpick, pull it down the length of the root. Allow the rocket to rest horizontally while the glue cures. You may need to repeat the procedure until the fillet is the size you'd like.

If using epoxy, apply a very small amount along the root edge (we like to use wooden toothpicks for this), then dip your finger into rubbing alcohol and smooth the epoxy with the tip of your finger. If you are sensitive to epoxy or other adhesives, be sure to wear gloves while doing this. We like to use EPOXO 88 for this, but regular 5 Minute epoxy will work just fine. If using regular epoxy, you might consider adding some Micro-Balloons Filler to the epoxy to lighten it up a bit.