**Shapeways general instructions for Fine Detail Plastic:**

**Surface preparation**: After some additional experimentation I've revised my recommendations regarding surface prep, so take note. The first point of order is that you will want to clean you parts before you do anything with them; the RP process always leaves a residue of the wax support structure. And as you might be able to imagine, wax on the surface won't make for good paint adherence. Thus it has to be removed first. I would first recommend a bath in very hot tap water and soap (mild liquid dish washing soap). This will effectively melt off any lingering wax residue. What I did was to crank my tap as hot as I could physically handle as I held the part in the water stream and then lightly brushed any nooks and crannies with a short bristled brush, doing this for each individual part. After addressing each part individually, the current wisdom is to soak the parts in a fresh batch of soapy water for a few hours. You *should* see a dramatic difference in the part's surface texture as the wax residue melts/washes away. Then, let the parts dry, completely.

An alternative, or secondary cleaning method, is to use isopropyl alcohol (91%) to clean the parts. Let the parts soak, though keep the soaking to a minimum (and be mindful, I've read it can damage the parts, I'm assuming ones that are thin-sectioned), and then rinse them with water, letting the parts dry completely.

At the moment I'm partial to the isopropyl method as it seems to remove any of the lingering resin. I had a model I had cleaned with acetone (my old cleaning method), assembled, and primed, only for about 6 months later a waxy residue began to leech out. I wasn't sure what I was going to do as the wax, while it would temporarily go away with hot water, always came back and thus and the model sat until I went ahead and tried isopropyl on a whim. And while the isopropyl attacked the primer, it did strip the waxy residue away. 3 weeks later and we're still good.

Once you have cleaned your parts, and are completely dry (and I mean completely), set them outside in the direct sunlight for a couple of hours (or, if you have it, a UV light will suffice). Why? UV laser light is used to harden the resin during the SLA process but it apparently doesn't always *completely* cure the resin, thus a post-cure stint outside in the sun, for a couple of hours, should do the trick. The reason I stress letting the parts dry, is that any wet areas might cause a inhibition of the final curing process resulting in a white residue. At least, that's my understanding. I haven't seen that personally, but I've read it is possible.

**Gluing**: I typically use cyanoacrylate glues (superglue) to adhere the RP parts to the plastic kit, or RP parts to RP parts. However, using superglue leaves you very little margin of error, especially with parts that slip fit together; once it's stuck, it's stuck. An alternative is to use 5 minute epoxy as it gives you a window of time to position the part. But epoxy needs a surface with "teeth", especially when bonding plastic to plastic. So make sure you well prepare both surfaces with aggressive sandpaper prior to bonding if you use epoxy.

**Painting**: The Fine Detail Plastic rapid prototyping process produces some of the finer surface finishes. However, that doesn't mean it's completely smooth; there will be steps/striations. As for how to deal with these striations, give the parts an initial sand to give the surface some teeth (400 grit), and then get yourself a good spot-filling spray primer. I'm a

huge fan of Dupli-Color's Filler Primer; it can be found in the paint section of most auto part stores. Multiple coats of that, sanding between each, should eliminate the striations in the model surface.

***Updated 7/29/2019***