

Latex House Paints for Models

Part 2

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Since I first issued the information in part 1 on the use of latex paints for modeling there have been many modelers who have doubted this process and there have also been many who have tried it with very pleasing results. It seems that there are still a number of questions that remained even from those who have had success.

Some of these questions are:

- Can you paint Latex over either Nitrate or Butyrate Dope without using a primer?
- Can I apply Latex directly to unprimed fiberglass or plastic parts?
- Can I apply latex directly to unprimed fabric coverings or plastic coverings such as Monocoat?
- If you need a primer can you use a water base or do you need a solvent base primer?
- Can an HVLP (high volume low-pressure) spray unit can be used with latex and get decent results.
- Does latex need to be top coated to be made fuel proof?
- What's the best topcoat method?
- What's the best method to mask colors and prevent bleed over?
- What are the best thinners and / or additives for latex?

In case I missed these in my previous articles I shall address them here to help everyone feel a little more comfortable with trying this process. I'll also add a few hints and tips that I have tried over the past few years since the first article.

Can you paint Latex over either Nitrate or Butyrate Dope without using a primer?

Latex can be put on over Nitrate or Butyrate dopes. The key here though is to make sure the dope is fully cured. Most dopes out gas for a fairly long time. Sometimes three to five weeks depending on the temperature and humidity. A good test is to sniff the surface up close. If you can still smell the dope then it hasn't finished out gassing. The problem with this is that when you paint over the dope while it is still out gassing you trap this gas and it will eventually dissolve or lift the latex. This lifting process would also occur if you put epoxy or any other paints over dope that is not fully cured. In most cases you will not need a primer for the latex over the dope. If you do choose to use a primer either solvent or water based will work. If using water based primer you'll need to wait for the dope to out gas. If you are using a solvent based primer you'll need to wait for it to finish out gassing also before applying the latex. In either event, primer or not, Just sand the doped area with 280 - 320 wet and dry paper used dry prior to applying the latex to give the latex a surface to bite to.

Can I apply Latex directly to unprimed fiberglass or plastic parts?

You can put the latex directly on raw fiberglass BUT. You must be sure you have all those little dents, pinholes and such filled. The best method is to first sand the fiberglass and shoot two coats of primer. Then sand off almost all of the primer. This will leave you with a very faint gray part and will also show you where you need a little more bodywork. Fix these areas with your favorite filling material and re-apply just enough primer in those areas to cover the repair. Again sand lightly. Try to keep the entire part a light shade of gray. I have had great success in sanding off all the primer and then applying the latex to the raw fiberglass. This method provides a great finish without the added weight of the primer. Latex can also be applied directly to unprimed plastic parts with great results. Whether you are painting fiberglass or plastic the key here though is to make sure the surface has enough roughness to it to allow the latex to mechanically bond to the surface. Sanding with 280 – 320 paper works best. Do not make the parts too smooth or the paint will not have enough bite.....

Can I apply latex directly to unprimed fabric covering or plastic coverings such as Monocoat?

I have painted fabric-covered aircraft and those with only fabric covered controlled surfaces many times and did not prime the fabric-covered areas. Here I used Super Coverite with the latex applied to the “raw” Coverite. The latex took to the Coverite like it was made especially for it. Great.... Nice thing here was that even when the fabric sags or takes a dent you can apply heat and re-shrink the fabric and the paint just goes along for the trip. Another thing I discovered is that latex paints don't crack due to vibration or expansion / shrinkage of parts. It's rubber, right.... This technique can also be used for any other iron-on fabric covering. You can also paint over plastic films such as Monocote. BUT, they must be roughed up some to allow the paint a surface to bite to. Remember that latex requires a mechanical bond to the surface it is applied to. To roughen up the plastic films use some steel wool. Steel wool comes in all sorts of “grits”. They are generally measured in “O's” (00, 000, 0000 etc). The more “O's” the finer the “grit”. For most plastic films “triple ought” (000) or “four ought” (0000) works the best. You may find however that some latex paints will still peel off the surface because the paint does not have enough mechanical bonding strength. Test on a piece of scrap material first. If the latex peels off then you'll need to use a coarser steel wool.

If you need a primer can you use a water base or do you need a solvent base primer?

When I use a primer I generally use the automotive lacquer variety. I have only recently started to try other primers. Some of the water based primers work very well and sand just like the lacquers. But I have found that the water-based primers take longer to dry than the solvent-based primers. Both have worked well as far as filling those little nicks and dings. When I use a primer I like to use a light gray or white. These colors help show the surface imperfections a bit better after filling and re-sanding and they are also a better base for any top color to follow.

Can an HVLP (high volume low-pressure) spray unit can be used with latex and get decent results.

You should be able to use any of the HVLP guns on the market today. The air pressure will have to be played with as well as the amount of "thinner". Everything is a slight experiment, as latex from different manufacturers will act differently. You'll also find that the color itself will cause changes in settings and techniques... Just remember to go easy and only change one setting at a time

Does latex need to be top coated to be made fuel proof?

Latex doesn't need to be top coated if you are using a gas engine. It takes exposure to gasoline very well after the full cure time. However, it turns to a goeey mess if glow fuel gets on it.... If you are using glow fuel the latex most definitely has to be top coated...

What's the best topcoat method?

Here clear epoxy or polyurethane works well. But you must wait until the latex has cured fully and then be careful not to flood on the clear. If you are going to use water-soluble or vinyl pressure sensitive decals give the latex a week to cure before putting on the decals. When all is FULLY cured, about a month or so, then you can top coat everything. Key is to do LIGHT coats. Do not get things too wet. Remember that some epoxy and polyurethane paints use a toluene based thinner. Check the can. Toluene attacks latex... I have also used water-based polyurethane with equally good results. I have top coated the latex many times before. My preference in the past has been K&B Hobby Poxo clear. Unfortunately this is no longer made so I went on the hunt for a suitable replacement. Guess what! I found an excellent replacement in Klass Kote. This material works very well. With this I have tried the satin hardener and the satin hardener with an additional flattening agent added. Both work just super for the type of finish I wanted to obtain. Just don't flood it on as stated in past articles. I generally do military stuff so the when I use clear it is mixed with "satin" hardener. Sometimes I add talcum powder to the mix but with the Klass Kote they have a powdery flattener that can be added to the satin hardener to get a "dead flat" finish.. Works great. Just go easy on the clear. You'll only need little more then two dustcoats. Some modelers don't like to clear coat, as it has been known to "yellow" over time. I generally haven't been too concerned with the yellowing part as I do old WWII birds and they get better looking with this "aging" process. The sport models I did I'd use a gloss clear on and just a few coats of auto wax from time to time. This seems to make them stay clear longer. It seems the wax keeps the UV rays from turning the clear yellow.

I have never used the polyurethane as the color coat. I have never really liked working with these paints, as they are too heavy and too messy for my taste. They are also very difficult to work with when it comes time to match the paint job after a repair. Should you like to try the clear polyurethane I suggest you do a few test samples first. Spray a piece of glass and let the polyurethane cure for a week or so. Then apply some raw fuel and note the results.... Not all polyurethane paints are the same and may have different reactions to the type of fuel you are using so testing is in order here.

I have tested a few polyurethane clears and must say I was disappointed in the results. All the waterborne clear coatings I tried failed all the test. This didn't matter if I used gloss, satin or flat clear. They all failed to stand up to glow fuel and gasoline. Needless to say the acetone test was also a failure. They did produce a nice finish but what good is that if you can't get fuel on

it... Next I tried the mineral based clears. Here we had pretty good success. The mineral based clears did pass the fuel test for glow fuel as well as gasoline. Some started to soften a little with the acetone but for the most part they were good. One area that the mineral based clears have a problem is in yellowing. Here they exhibited a strange trait. When placed over a color they stayed clear quite well. But when placed over white or very light colors they turned yellow in short order. In just a few days the white had a very distinct yellow tint to it. Looked really bad when placed next to a white “control sample” from the same paint.. So for clear coating a white plane they would not be a good choice and I would suggest the Klass Kote....

What’s the best method to mask colors and prevent bleed over?

When masking the latex, I have found that there are two really good types of tape to use. One is available from your local auto-body supply shop. They carry all the good 3M stuff. Use the *Blue* low tack variety. Don’t use cheap stationary store grade masking tape. A second source of some good tape is your local LOWES or HOME DEPOT. In the painting section they also carry the 3M tapes. Here you’ll find the *Blue* stuff as previously described AND you’ll also find a *light purple* variety. This stuff is even lower in tack than the blue. It was made for applying the tape on to painted walls etc without pulling off the previous layer of paint. Both work very well for our applications. After applying the tape and covering all surrounding areas you don’t want paint on, spray lightly along the taped edge. Gently dry this with the heat gun. Repeat this two more times before doing the whole area required. Do the spray and heat gun bit here again as described above. Only this time after the last coat is applied partially force dry the area near the tape. Then remove the tape and head for a cup of coffee.... After all is FULLY cured you can apply your decals or clear coats as described elsewhere.

What are the best thinners and / or additives for latex?

Naturally most people would expect me to say to use water. Some guys would suggest regular tap water others would suggest distilled water. Both will work just fine but, I now thin the paint with an alcohol/water mix OR better yet.... Windshield washer fluid. Yep..... Windshield washer fluid... Anybody's. Cheap stuff from AID auto stores or NAPA etc.... If you get the blue windshield washer fluid that is common around the country don’t worry, the blue tint does not change the colors of the paint. The interesting thing about most windshield washer fluids is the soap content. They all have some. The soap is what slows the drying process of latex paints. Not the alcohol. The alcohol evaporates fast and leaves the soap and water behind. Water goes next leaving the soap. The soap eventually leaves. Slowly. This does slow down the drying time a bit which allows the paint to “flow” more and results in an even better finish on almost any kind of part. Once fully cured, this stuff can even be weathered just like the epoxy and lacquers. Really neat..

The only additive I put in latex is a material called FLOETROL. This is used to allow the latex to flow out without running. It also acts as a lubricant for spray guns. It will also reduce the sheen of the latex just a tad. The latex dealers will tell you it won't but it does. This stuff can be got from the guys that supply pro house painters. They use it in rolling and spraying. FLOETROL looks like milk (but don’t drink it or put it in your coffee!). Only add about 2 oz of FLOETROL to a quart of paint before you do anything else. This is the only time you’ll add this stuff so you won't need to buy much.

Some additional hints and tips:

Spraying:

With a touch up gun or airbrush I start with around 20 psi. air pressure from the regulator. This will vary plus / minus 5 lbs depending on the paint being used. Funny, but not only does the brand of paint and the amount of thinner matter here but SO DOES THE COLOR. Different colors use varying amounts of pigment particles. You can use any type of paint, just be ready to play the air pressure Vs thinner game. In any gun I start with about 20 % thinner added to the paint. Mix up a very small amount. Baby food jar size. Try spraying it through the gun. If the paint does not come through the gun then increase the air pressure a bit. If it still does not come through put the air pressure back to where you started and add more thinner. Try again. If the paint spits, then you'll need more thinner, If it comes out real wet and runny you went to far on the thinner. Just add more paint. The game here is to use this small jar to find what mixing ratio and pressure settings that color needs. All colors will be different even if from the same mfg. Try test spraying on a piece of glass. Set you gun for a low paint flow at first. If you get runny stuff even at low flow settings then you have too much thinner. You can try increasing the air pressure but usually the mix will require more paint.... If it comes out dry looking, increase the flow of paint or add thinner. Very rarely will you get the air pressure below 15 lbs. You should try to avoid having to have the pressure above 30 psi. Latex acts like it is thick and heavy compared to other paints yet you'll find that most times it is lighter after it has dried. Some of the real nice features about latex are that it is non-toxic and develops very little over-spray. It is also very easy to clean up. All tools and equipment can be cleaned with regular soap and water.

When to Paint:

As far as weather conditions when you paint. It doesn't matter. I generally paint in my basement in mid winter here in the northeast. The average temp in my shop then is around 55 to 60 degrees. (I like it cool). Latex can be sprayed on a rainy, cold, damp day and it will give the same or better results as on a sunny day in the middle of July. In fact, the cold damp day is easier to work with the paint. I just keep a heat gun around to accelerate the dry between coats. Here I spray the first coat on just barely enough to see coverage. Dry with the heat gun. Spray a second coat on just a bit wetter. Dry again with the heat gun. Spray a third coat on and go up stairs. Come back the next day and you'll see you are all done with that color. Go over the part with the heat gun once again just to make sure that all is cured and you are ready to mask for the next color.

One modeler I talked to had a problem with the paint drying too rapidly and the overspray of each pass with the spray gun drying too fast and leaving a dull finish on the preceding pass. As it turned out he lived in Arizona and was trying to paint on a very hot and dry day. No amount of Floetrol would slow down the drying of the paint. What was happening was that the paint was almost dry before it even hit the surface he was painting. After many phone calls and head scratching sessions, the answer was simple. He closed the garage door, wet down the floor with a garden hose to raise the humidity in the room and began painting. Presto..... The paint now slowed down in its drying time and flowed out like promised..... Strange stuff, yes?

Curing / drying times:

As with any painting process, time is the most important ingredient here.. Although sun light seems to speed the "hardening". When I have finished a model I set it out on the patio table each day in the sun to help "out gas" the paint. I also suspect that the amount of soap that was in the washer fluid may have an influence too. One note here. If you put a plane together too soon before this "hardening" can take place and the plane is subjected to a hot day, sometimes the wing and fuse will stick together. So for the first few times the plane is assembled I use baby powder on the wing saddle..... Another really neat thing about all this stuff is if you don't like the paint job or you have produced runs, spits and stuff, or dog hairs have gotten in it. Just wash it off with a damp rag and dry with your heat gun and start again. You could also try this, if you have a part all painted and nice and wet, and some dog hair or a bug gets in it, just pick out the offender with some tweezers. Leave the paint alone, don't force dry it, and by the next morning the stuff will have flowed to cover the spot you touched.

Weathering:

Now that you have mastered all the latex painting techniques and finished your latest warbird before you apply any top coat of clear, assemble it and place it on the table all assembled. While you admire your latest handiwork look at it with an objective eye (I mean a "REAL" objective eye) you'll probably notice that it looks too clean! Looks new. Needs a little dirt and oil stains etc. Need some weathering and stuff, engine and gun exhaust and dirt smears on all the panel lines. You know, all the signs that this was a "used" combat machine.



To get some of these neat effects try this: Let the latex "cure" for a few weeks so that any water you'll apply will not affect the finish. Then you are ready to do the weathering. Try just a little dark Grey chalk from the art supply store. The art guys call this stuff "pastels". Looks and feels a bit like crayons. Kind of waxy and chalky at the same time. Put it on with your finger at each VERTICAL and SPAN WISE panel line. Then take a soft rag and start at the panel line and draw the chalk toward the rear. Only work front to back. You'll see that as you draw the chalk toward the rear it will smear and thin out at the same time. Keep working it this way until it



looks like you have an old oil smear on the surface. Very faint at the rear and a bit pronounced at the panel line, BUT only at the rear side of the panel line. The front side should be relatively clean. Practice on the bottom. If you don't like the results you can remove the chalk with soap and water. Give the chalk a try. It won't hurt the paint and as I stated, if you don't like it you can wash it off. Eye shadow stuff will also work. Steel some from your wife or girl friend just to have a try. Again, all this will wash off if you don't like it.

Did you do rivets too? If so, try this little trick. Sprinkle baby powder on the wing and fuse and spread the stuff all over the place. (This would normally be done after the pastel chalk treatment). Again lightly wipe with a soft cloth in the appropriate direction. On the wing wipe from front to back, on the fuselage wipe from top to bottom NOT front to back. The

powder will "fill" all rivets and panel lines just enough to make them look like they have dirt and grime in them. Then brush with a soft brush, same direction as before. (Don't worry about getting some IN the cockpit, the cockpit should be weathered too and the light dusting of powder it will get will tone down the interior just right). Now blow off the entire plane and cockpit with low-pressure air. A few wipes again with the cloth. Stand back and look at your new "old" airplane. Once again, if you don't like it, it will wash off. Once you are satisfied with you "aging" process you can proceed to clear coat everything to keep it in place. Naturally if you have done this type of weathering then the bird should be clear coated in satin or flat clear NOT glossy. As you use the plane you'll notice that the weathering will change as you handle it at each session.



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The more you handle it the better it gets..... It is all this little "dirty work" that really makes the model look like a shrunken miniature. Just remember, go very easy when weathering. Less is best.

I hope I have answered most of the remaining questions out there on this subject. You will find that the first few times you try using these techniques and materials will require a bit of learning. But don't be afraid to experiment with materials and procedures. Practice on some scrap stuff. A piece of scrap window glass works great for this. Remember... If you don't like the first shot just wash it off and have another go.....Good luck.

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