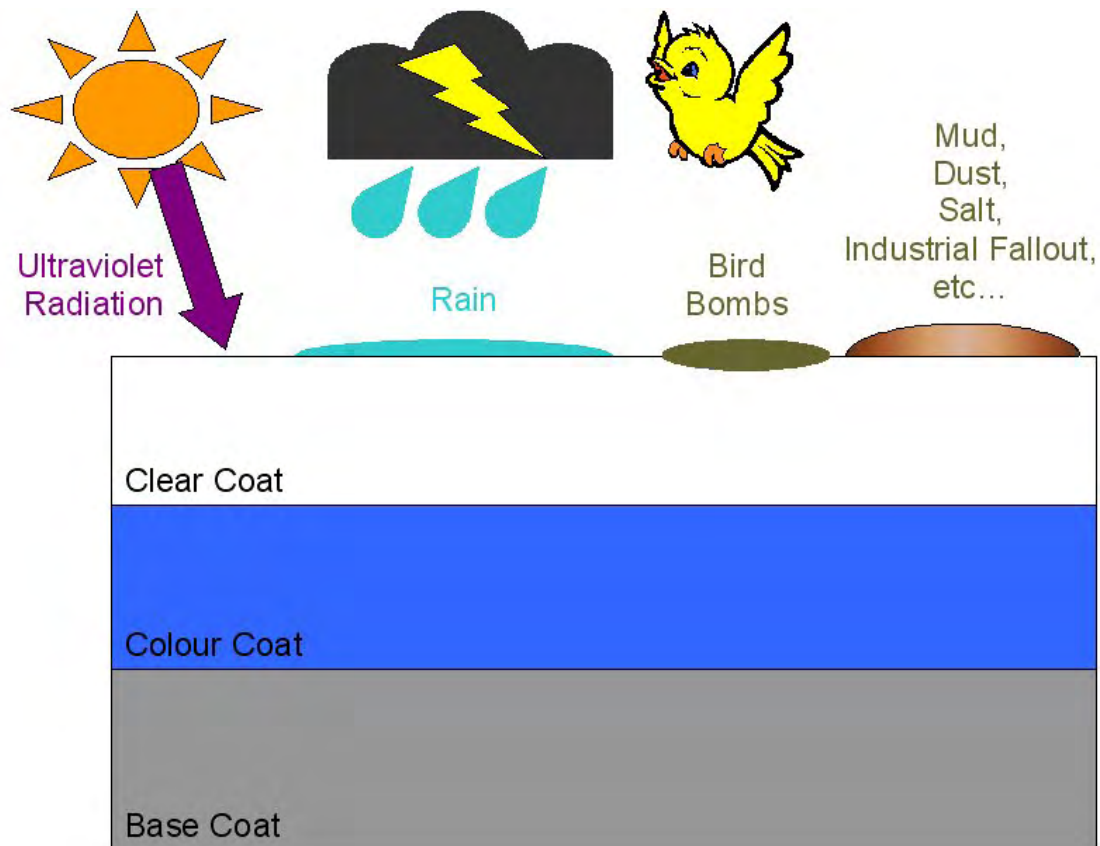


In this thread I present a guide to *Last Stage Products* (LSPs) and their uses for protecting the finish that you have worked hard to produce from the washing, claying and defect removal stages. Paintwork protection comes in two generic types: **Sealents** and **Waxes**. In some cases there are products which combine the two of these.

Why Protect Paint?

The paintwork on your car is there not only to look nice but to protect the underlying metal work as well. However, paintwork requires protection of its own as well. It's like the skin of your car and it is continuously subjected to contaminants and environmental harm when it's outside:

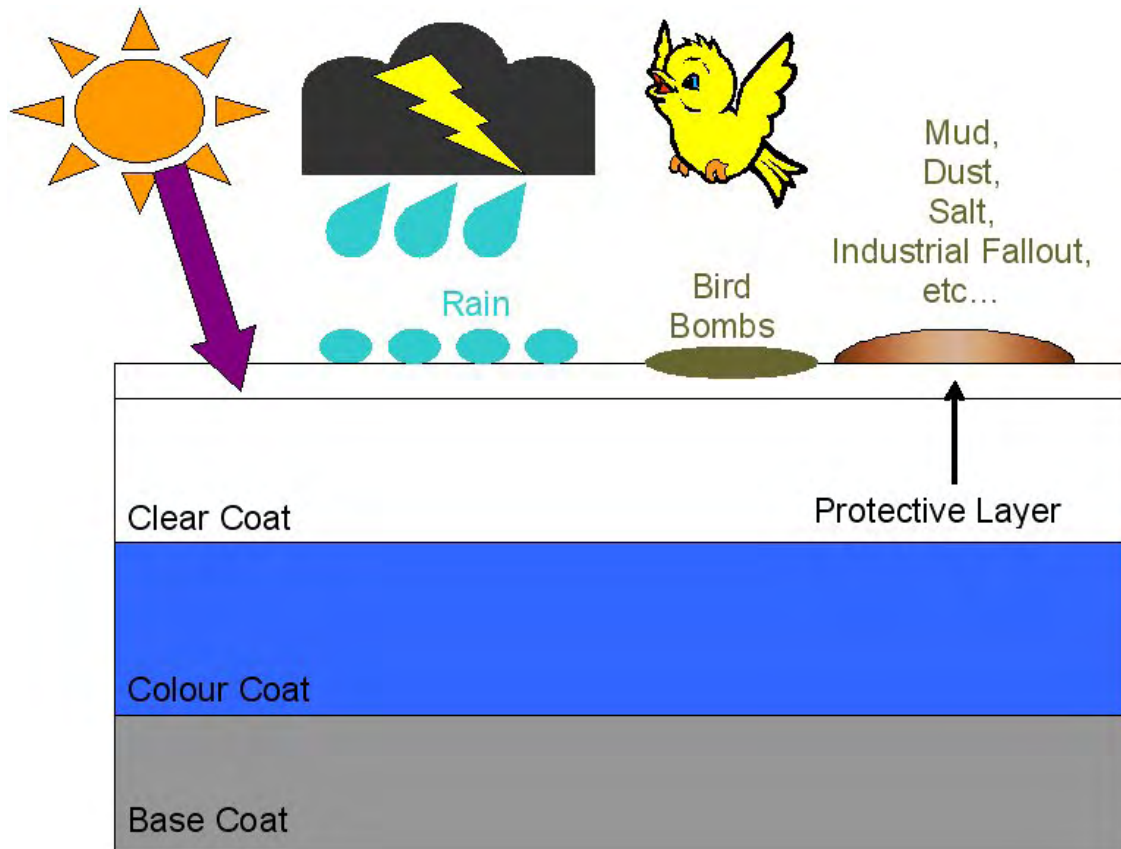


Examples of these contaminants are:

- > *Ultraviolet Radiation (UV) from sunlight - you cannot see UV, can cause fading*
- > *Rain - rain water is actually a contaminant which can also be filled with pollution and acids*
- > Bird bombs - highly alkaline and can eat into the finish of your paint
- > Industrial Fallout
- > Road film
- > Salts (road salts are very bad for paint, and can cause corrosion on metal)
- > General muck and grime

The chances are that you may have just spent many hours washing, and removing defects from your paint and glazing it to get that sought after wet look shine, but it is necessary to protect that finish with a hardwearing layer in order to keep the finish

looking at its best, otherwise the elements above will degrade and damage the paintfinish. So a protective barrier is applied to the paint:



Now, its the protectivbe barrier which is subjected to the elements and not the paint. The protective barrier will be eaten away over time by the elements and will need to be replaced, but its far cheaper to replace the protective barrier than to replace the paint!!

Paintwork protection comes in the two generic types - sealents and waxes (carnauba wax). Paintwork protection will add only a small amount to the actual paint finish of a well prepared car, but still there are noticeable differences between the looks and longevities of the two generic types of paint protection, which are covered here.

Paint Sealents

Paint sealents are man made paint protection (synthetic) that have recently come to promenance in the detailing world. They have been developed by man to provide tough protection for paint finishes to protect you pride and joy and preserve the finish you have worked so hard for.

The look obtainable from applying a paint sealent is a very relective and generally crystal clear look. Reflections in paintwork are sharp and eye catching and metallic flake is allowed to show to its full potential. However, paintwork sealents have been known to lack a certain richness to the finish - despite the supberb reflections, the finish can sometimes lack the warm glow obtainable from a carnauba wax (see later).

Nevertheless, this has been addressed impeccably by manufacturers over recent years and paintwork sealents are now coming very close to matching the warm glow to paintwork that is a trait of a carnauba wax.

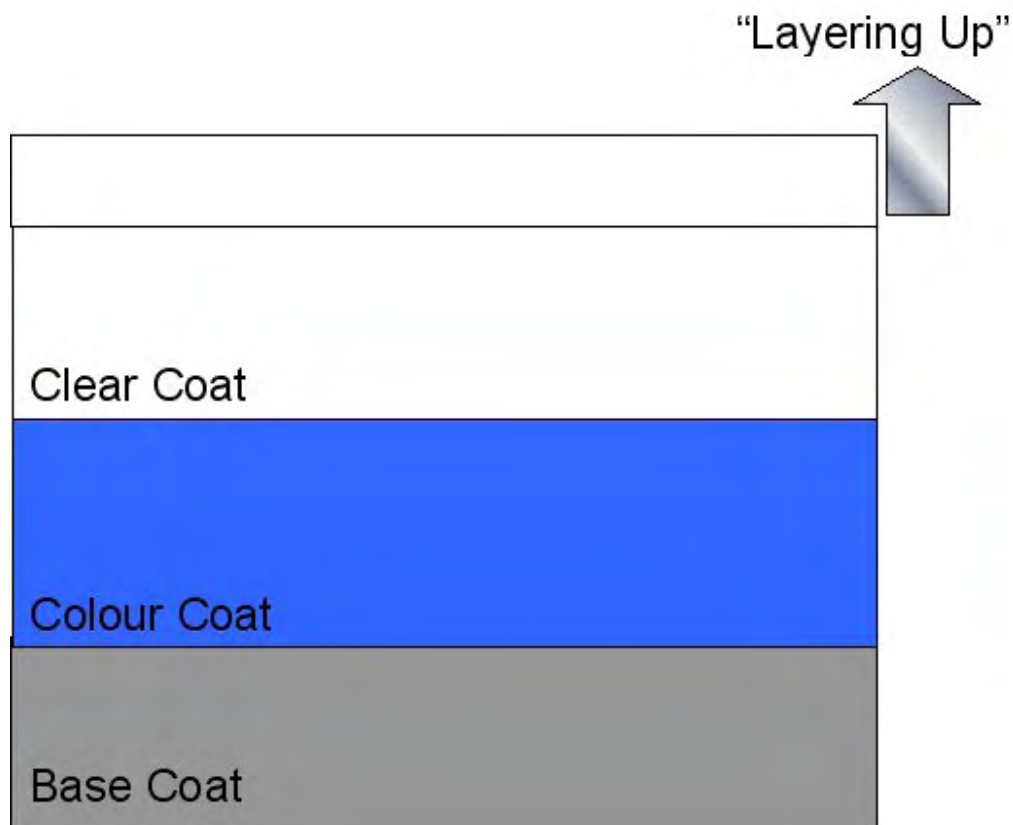
The clarity of the shine comes from the synthetic nature of the product - the layer provided by a sealent is highly transparent (generally speaking), and this allows paint features such as metallic flake to be shown off to their highest.

Generally speaking, paint sealents have high durability when compared to carnauba waxes and are therefore favoured by those who are looking for a durable finish that is easy to maintain by simply washing the car. Additionally, they are favoured by those searching for the ultimate in shiny, reflective surfaces from paintwork and those wishing features such as metallic flake to be shown off to its highest.

To apply a sealent, always follow the manufacturers instructions, here I list some generic tips:

- > Use a sponge or microfibre applicator for application by hand.
- > Use a finishing pad for application by machine.
- > By hand, apply in circular motions first and finish in straight lines to ensure even coverage.
- > By machine spread product evenly at a low speed (speed 2 - 3 on PC)
- > Less is more with protective products, a little generally goes a long way.
- > Keep the layers thin, remember the residue you remove is wasted product!
- > For most sealents, curing time is required - upto and sometimes more than one hour before removing product residue. Some don't require this however.
- > Buff off residue with a microfibre towel.
- > If residues resist easy buffing, don't apply heavy pressure - instead spary the mf towel with a little QD and this will help remove the residue.

Sealents can be *layered* although multiple layers of sealents are not commonly applied. This would build up the thickness of the transparent layer on the paint:



Some examples of sealent products:

- > Meguiars #21 Synthetic Sealent
- > Meguiars NXT Tech Wax (yes, its actually a sealent!)
- > Poorboys EX-P
- > Autoglym Extra Gloss Protection

Carnauba Waxes

Carnauba waxes are the traditional automotive paintwork protection. Carnauba wax is secreted by the leaves of a tree in the rainforests of Brazil in order to protect the leaves from the blistering heat. It is one of nature's most durable waxes with excellent protective properties that makes it ideal for protecting paint. Alas, the tree can continue to secrete the wax to continually update its protection, but your car cannot do this - so its down to you to keep your wax protection updated to keep your paintwork protected! Most carnauba wax products use Grade 1 Yellow Carnauba wax in their formulations - this is the highest grade of carnauba wax available.

The look generally achievable from a carnauba wax is one of a warm glow to paintwork that comes from a glossy and rich looking finish that has great depth. However, carnauba wax is a natural product and therefore contains impurities. The wax is "yellow", and is not completely transparent so the finish will lack the ultimate reflectivity provided by the sealent and in some cases paint features such as metallic flake can be slightly muted. Much has been done to improve this by for example further refining yellow carnauba to ivory (white) carnauba which helps to remove any yellowing effects the wax may provide. Nevertheless, the warm glow and depth

provided by a carnauba wax are still highly sought after, hence why sealent manufacturers are trying to copy it with sealents.

Generally speaking, carnauba waxes have lower durability than sealents and therefore require updating on a more regular basis. However, one of the most durable paintwork protection products I ever used was a carnauba wax - Collinite 476S, so if its ultimate durability you're after, try this product!!

To apply a wax, always follow the manufacturers instructions, here are some generic tips:

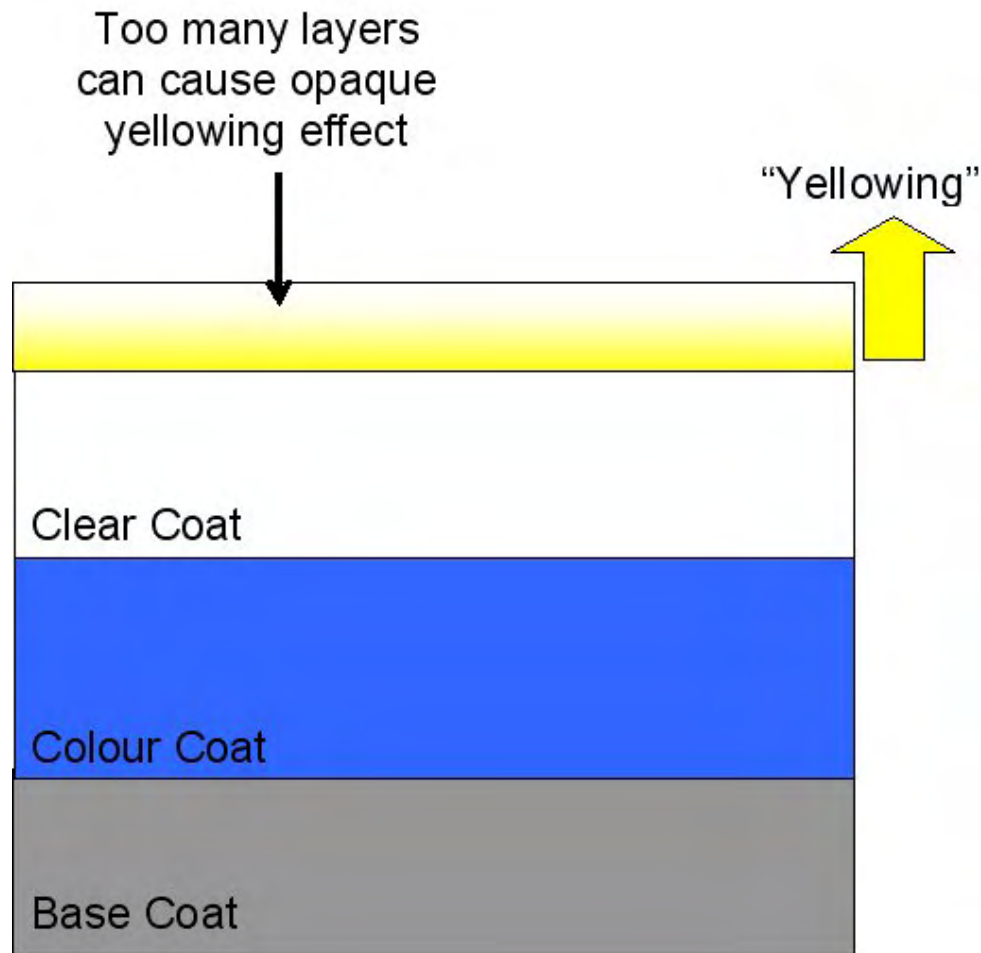
- > Use a sponge or microfibre applicator for application by hand.
- > Use a finishing pad for application by machine.
- > By hand, apply in circular motions first and finish in straight lines to ensure even coverage.
- > By machine spread product evenly at a low speed (speed 2 - 3 on PC)
- > Less is more with protective products, a little generally goes a long way.
- > Keep the layers thin, remember the residue you remove is wasted product!
- > For some waxes, curing time is required - perform the swipe test before removing residue (see below)
- > Buff off residue with a microfibre towel.
- > If residues resist easy buffing, don't apply heavy pressure - instead spary the mf towel with a little QD and this will help remove the residue. Or wait longer and try again.

Swipe Test

This test is carried out to see whether a wax residue is ready for removal. With a clean finger, gently swipe it across a small area of paintwork. If the residue comes away easily, then the product is ready to remove.

Yellowing

Carnauba waxes can be layered to improve durability and appearance, however caution should be exercised with the amount of layers applied. Carnuaba wax is a natural product and as such can be slightly opaque in some more traditional paste carnauba waxes such as Meguiars #16. Too many layers will cause a yellowing effect where the opacity builds up to mask the beauty of the colour of your paint:



Spit Shining

Normally, if you want to apply multiple layers of a protective product it is necessary to wait 12-24hrs between each coat. However, it is possible to apply two layers of a carnauba paste wax in one go by using the technique of spit shining, outlined here (similar to spit shining army boots). This is the generic technique I use for spit-shining:

- > Apply the wax as normal to the first panel then spray with a little QD spray to wet the surface. Do not buff.
- > Repeat for three more panels (I generally call the roof two panels, so roof, bonnet, front wing to start for example)
- > Go back to your first panel and apply a second layer of wax and work until the QD beads disappear and you are left with a residue as you would have normally. You can buff the panel first if you like, QD then re-wax but I just re-wax over the original layer.
- > Repeat this on the other panels.
- > Buff off residues.
- > Repeat over whole car.

Spit shine is used to enhance the reflectivity and durability from a carnauba wax and has been known to produce awesome results.

Some popular carnauba waxes are:

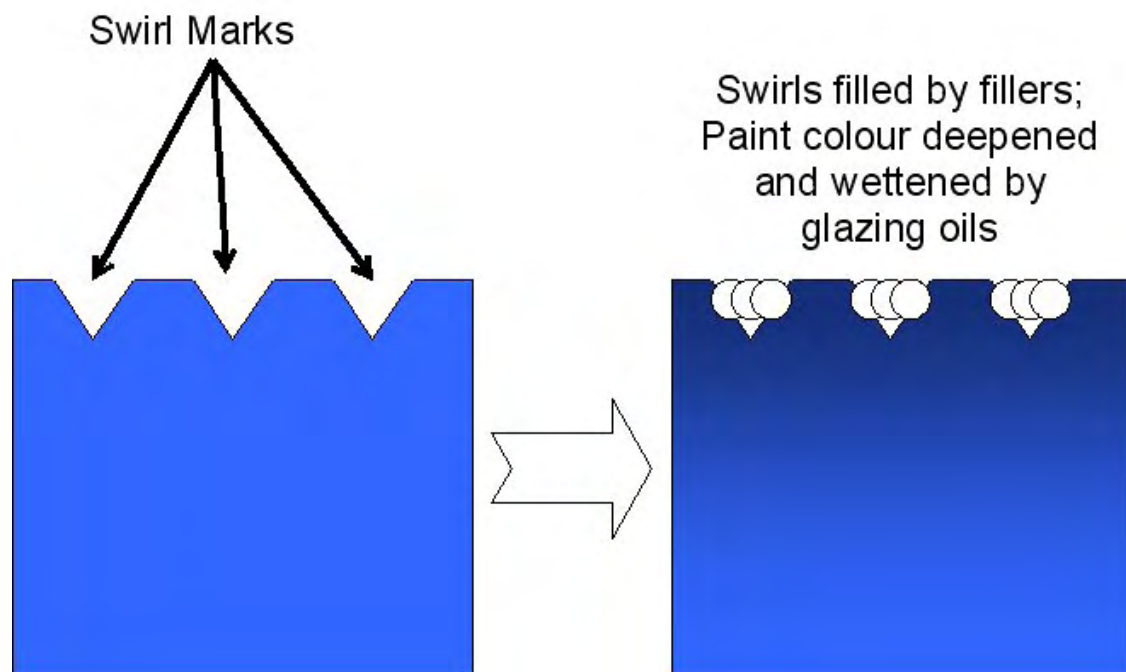
- > Meguiars #16
- > Meguiars #26
- > Collinite 476S
- > Poorboys Nattys/Nattys Blue
- > Pinnacle Souveran
- > Pinnacle Signature
- > P21S
- > Victoria Concours
- > Victoria Collectors

Best of Both Worlds

As mentioned, the appearance generated by sealents and waxes are very different but it is possible to get the best of both worlds - sealent durability with carnauba wax warm glow by applying both to your paint. Always apply a sealent layer first and finish with a carnauba wax for the icing on the cake. Indeed some manufacturers have products which contain sealent and carnauba, for example Poorboys EX with Carnauba.

All In One Products

Many products on the market perform more than one task at once - for example Meguiars NXT Tech Wax has fillers to mask minor swirls, glazing oils to enhance the wetness of the shine and deepen the colour and sealent to provide protection. This AIO product would perform the following to paint:



AIO products save time in a speedy detail, but for superior defect removal it is necessary to use dedicated cleaners and polishes. However, for a quick detail AIO products are very useful indeed. Many AIO products, such as Tech Wax, benefit from

the application of a "pure wax" (ie a wax that's sole job is protection, no cleaning abilities) afterwards as the icing on the cake to top off the look of the detail.

Examples of some AIO products are:

- > Meguiars NXT Tech Wax
- > Klasse AIO
- > Meguiars Cleaner Wax
- > Pinnacle Liquid Souveran (fillers and wax)
- > Meguiars Gold Class Wax (glaze oils and wax)

Maintaining the Finish

As mentioned at the beginning the protective layer that you put on paint is still subjected to all of the harsh elements and is therefore abraded away over time. Thus it is necessary to top up the protective layer regularly to ensure you have good paintwork protection.

How Do I Know When To Top Up Protection?

When you wash your car, watch the rinsing water carefully. When rinsing with a flow of water the water should sheet off of the paintwork leaving behind the odd water bead. If the water lies in large flat regions, and doesn't sheet off the paintwork then it is time to top up the protective layer. Also, while water beading is not the best indicator of protection, the presence of small, tall water beads when it rains shows a good protective layer, while larger flatter beads can show a weaker protective layer.

Topping Up Protection

This is simply a case of adding an extra layer of LSP to your car. If, for example, you have been topping with Menzerna FMJ, then when it comes time to top up, you could just add another layer of FMJ. Or, you could use a different sealent/wax - its up to you. If you have topped with a carnauba wax, it is best to keep topping up with a carnauba wax as sealents were not designed to bond to carnauba waxes and this can adversely affect the durability of a sealent if its applied ontop of an existing wax coat (even a weak one).

Spray Waxes

While many detailers here are happy to maintain their finishes by regular washing and occasional (every few weeks for me in the summer) protective layer top-ups, it is also possible to use sprax wax products after washing to keep the wax protection topped up. A popular product for this is Meguiars NXT Tech Wax, which can be applied after washing the car (spray onto mf towel, wipe across paint and buff residue with a second clean mf towel) to keep the protection topped up. This spray wax is actually a sealent, and therefore can be used regularly without fear of yellowing. Another popular spray wax, known for its excellent results in silver and many other colours too, is Optimum Car Wax. This can be used as a last stage part of a detail, and also as a maintenance spray after washing. However, this product contains carnauba wax therefore over application of the product should be avoided to avoid yellowing for example.

Credits

DaveKG for all the info contained in this document.