



standothek

Prestige and Classic Cars.



The Art of Refinishing.



Foreword.

Standothek Prestige and Classic Cars.

Times are changing. Who would have imagined power steering, five-speed transmissions or ABS back in the 1960s? Today, however, nobody would buy a car without these comfort and safety features.

Nevertheless, demand for prestige and classic cars is growing. Legends of the road such as the BMW 2002, the VW Beetle or the Jaguar E Type are no longer built but they are becoming increasingly popular. The reasons for this are varied:

- The number of historic cars is growing. After all, the European auto industry started mass production in the 1960s.
- People who bought their first car about 50 years ago have just gone into retirement. This generation tends to have sufficient money. And it is the first that can bring memories of their youth back by buying a vintage car.
- Old and young vintage car lovers as well as buyers and sellers of prestige and classic cars are today exchanging information across borders. Never before has it been easier for the vintage car community to establish a network.

All this is reason enough to look at this topic from a professional point of view and to inform you, as a Standox partner, about the differences between the refinishing of prestige and classic cars and the repair of new cars and on how to adopt this business model.

More specifically, this Standothek is designed to help you

- make a precise estimate of the work involved in all steps of the repair,
- effectively protect historical vehicle bodywork against corrosion,
- find the right color shade,
- mix the right paint in an environmentally compatible way and make the finish shine like new,
- win new customers with a personalised approach.

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What would a car be without its paintwork?

The history of automotive painting.



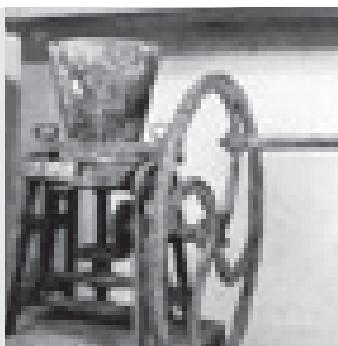
It's neither the engine, nor the dashboard nor the gearbox – no, what a potential car buyer usually sees first is the color of the car's shiny paintwork. Things were different in the early days of the automobile. Just like the technology under the bonnet, automotive coatings have come a long way from common black pitch to waterborne finish.

The first automobile, the Benz Patent-Motorwagen, was not painted. Karl Benz had the metal parts protected against corrosion with a kind of common black pitch. In these days, two basic products were used as paint: oil varnish based on linseed oil, or, if a special quality was required, amber varnishes obtained from liquid amber resins which were very expensive. The term "amber paint" continued to be used for a long time, even long after natural resins had gradually been replaced by synthetic ones.

Automotive painters originally produced their paints in-house – first manually, later with hand-operated paint mills. This was done in the same way as it had been done by painters throughout the centuries, i.e. by mixing binders and pigments on sandstone or

marble slabs using a muller. Given that the paints were produced anew each time the pigments and the binders were mixed, the color shade was more or less a product of coincidence. While motorists were free to choose a blue, black, green, brown, beige or red car, it was impossible to specify the exact shade. All colors had a relatively earthy shade, as only mineral paints existed, which contained inorganic pigments. White lead paint and mineral red were used as the main anti-corrosion pigments.

In the early days of automotive engineering, the parts that had to be painted were the chassis, the bonnet and the body. Before the paint was applied, the surfaces had to be smoothened, as the sheets were beaten by hand or with a mechanical hammer. It took between four and eight weeks to coat a complete car. Several primer applications and a few intermediate coats with generous drying times were required. There was also a simple, faster-drying coating process based on wood oil, which took "only" about ten days.





Mass painting.

In 1912, Henry Ford had the first car produced on the assembly line. This approach changed the entire production process. Ford realised quickly that the painting process was a hindrance, as the painters could not keep pace with the fast pace of the assembly line. He therefore looked for a possibility to accelerate the painting process.

But it was only after the First World War that researchers discovered a new material for the production of paint – nitrocellulose, which had been left over from gunpowder production during the war. It was possible to process nitrocellulose into paint binders. Moreover, chemists were now able to produce plasticisers, some solvents and synthetic pigments on a large scale. The result were matt nitro paints offering short drying times (approx. 15 hours). The drying time could be reduced even further with the help of hot air. Polishing paste and a linen cloth were then used to polish the matt paints until they shone – a shine that has been unmatched by any topcoat system to date. Prep materials – such as adhesion primers, fillers and putties – were also produced on the basis of these binding agents.

The main requirement for processing nitro paints was the use of a spray gun, as the solvents contained in these paints dissolve the coating underneath. They cannot be processed using a paint brush. What is more, all surfaces must be cleaned and degreased thoroughly, as nitro paints are very sensitive to grease residues and are characterised by fairly poor adhesion.

Nitro paints still offered a very limited range of shades. With most car makers, customers could choose between red, blue or green, and the result was not guaranteed and standardised as is the case today. The first covering white pigment, titanium dioxide, was used in 1928 and quickly became the most popular color for sports cars and other open-top automobiles in the 1930s.

But the joy did not last long, as nitro paints are not weather-resistant. The constant decomposition of the binding agent quickly resulted in a dull look and frequent repolishing wore away the topcoat layer.





Nitro combination paints.

As the development of the vehicle bodies continued, the coating technology changed, too. In 1927, a new binder, alkyd resin, had been developed in the USA, where it was called glyptal. After it had been modified with fatty acids, it was possible to use this resin as a resin for lacquers. Alkyd resin coatings can be combined with nitro cellulose and could thus be used as elastifying components in nitrocellulose paints – this mixture was later commonly known as nitro combination paint.

In the 1930s, melamine resins and urea resins were developed, which did not yellow so quickly and were combined with alkyd resins to produce lighter shades. From 1935, these modified alkyd resin paints became increasingly widespread as they produced a harder surface than nitrocellulose paints and did not have to be polished. What was more, only half of the material was needed compared to the paints previously used.

Thanks to the new material and the modified technology, it took only just under four hours to coat a new vehicle body – provided that deep-drawn sheet metal was used, which did not require any putty work.

The colors changed, too. At the 1946 Auto Show in Paris, colorful automotive coatings were displayed for the very first time, which had become possible thanks to the new organic pigments. Vehicle coatings were also influenced by the silver-colored racing cars that were so successful at the time. For some time, it was very much en vogue to have a silver or silver-grey car.

After the Second World War, alkyd resins became almost ubiquitous in Europe, given that they allowed the then state-of-the-art alkyd melamine resin baking coating process to be performed on the assembly line. Primers and fillers were applied in a high-pressure spraying procedure, even though individual manufacturers already dipped their bodies-in-white in the late 1950s. Nitrocellulose paint was maintained only for very expensive luxury sedans until 1963/64 in spite of the increased care required for this kind of finish. Alkyd resins are so chemically flexible and exhibit such a high quality that they have played a major role in automotive coating until today. Soon after their introduction, they dominated the paints market in the field of refinishing too.





New materials for paints.

From 1963, polyester was the new material available to the paints industry. Polyester became indispensable particularly as a basis for stoppers, while nitrocellulose and synthetic resin stoppers became less important. The ingredients of topcoats changed, too. Alkyd resin paints were now mixed with isocyanates that accelerated drying even at room temperature compared to alkyd melamine resin paints. Forced drying in a combined spray booth and low bake oven enabled the automotive painter to save a lot of time with the new paint system, so that these booths soon became an economic necessity for bodyshops.

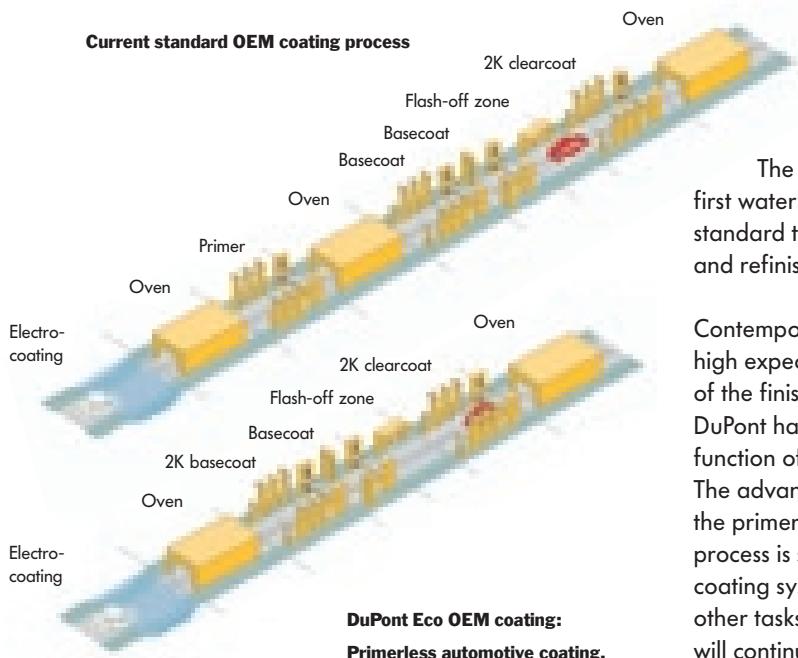
Between 1972 and 1975, the 2K acrylic polyurethane technology (acrylic base and polyisocyanate hardener) almost completely pushed alkyd resin paints out of the market. These 2K systems for the topcoat layer were characterised by a much higher chemical and physical resistance. The paints dried quicker and allowed dust inclusions and sagging to be polished out. From the early 1970s, the paint manufacturers also developed a primer filler that protected against corrosion to make special corrosion protection paints superfluous.

In the 1980s and 1990s, coating remained one of the most time-consuming processes in automotive production. Until today, electrostatic rotating atomisers have been used in OEM coating to apply the filler and the topcoat to the prepared car body. This saves a lot of material, because now 90 percent of the paint used are actually applied to where it belongs, on the automotive body.

By contrast, half of the material was lost as overspray in the conventional high-pressure spraying process. Since the mid-1980s, OEM coating has become almost fully automated and is today largely performed by robots. Only small areas remain to be painted manually: interior parts like the engine compartment and the trunk, hood and doors are sprayed with the gun first.

In the 1980s, a number of hazardous paint ingredients were replaced as paint manufacturers and car makers increased their environmental awareness. In addition, the share of organic solvents in the paints was reduced, because these substances are blamed for causing summer smog and other nuisances.





2K acrylic paints were developed further into low-solvent high-solids, i.e. paints with a lower solvent content and a higher share of solid particles.

The mid-1980s also saw the launch of the first waterborne paints, which have since become the standard type of paint both in OEM coating and refinishing.

Contemporary OEM coating is characterised by high expectations in terms of the looks and quality of the finish. Within the framework of its Eco concept, DuPont has developed a procedure in which the function of the filler is performed by special basecoats. The advantage for automotive manufacturers: as the primer coat is no longer required, the coating process is shortened and the capacities of the primer coating systems and drying ovens can be used for other tasks. In the field of refinishing, however, fillers will continue to fulfil their many (unseen) tasks for a long time to come.





Nicer, faster, cleaner.

The history of automotive refinishing.

Refinishing paints have come a long way since they were invented more than a century ago. During this time the demands and expectations placed on refinishing paints have steadily increased, pushing the standards of technical quality, appearance, economy and ecology to ever new heights.

Automotive refinishing has been performed ever since the emergence of the automobile. And it has been a great challenge for the refinisher right from the beginning. After all, any damage needs to be invisible after the repair. A particular difficulty was caused by paints based on wood oil. Any damage required all the paint to be removed, given that it was impossible to match and apply colors only on part of a panel. The only answer was a complete repaint.

Restoring weather-resistant nitro paints was an equally tough challenge for the refinisher, who had to mix the right shade from his stock of primary colors in a complex process.

After the introduction of the nitro-combination paint, refinishers tended to use these products as they were easy to combine with the baking enamels used in OEM coating. Until the late 1960s, nitro-combination paints were used by bodyshops that did not have a combined spray booth and oven or "combi-oven".

An alternative to this was the 80 °C refinishing paint, which was particularly suitable for the multi-layer coatings that were popular in the 1950s because it dried quickly so that it could be recoated soon. They were applied in spray booths where fresh air was filtered, heated and supplied vertically. Gradually, alkyd melamine resin paints conquered the refinishing market, too.

In the late 1960s a fundamental change came up in the field of basic materials. 2K epoxide basic materials were used increasingly as primers, primer-surfacers and fillers, first in the commercial vehicle segment and later on in automotive refinishing.

Whilst 1970s OEM coats comprised four layers – zinc phosphate, primer, filler and topcoat. Refinishers usually applied a three-coat structure consisting of a primer containing phosphoric acid, a filler and a topcoat. In order to emulate the constantly growing number of colors for refinishing purposes, the paints industry developed mixing systems.



Current automotive refinishing is characterised by environment- and user-friendly systems allowing for reduced stock keeping while offering a higher yield and ensuring improved safety with regard to the environment and the people applying the product.

Due to the poor opacity of certain pigments and the development of new effects, many refinishing jobs required as many as three coats in the 1980s. A tinted filler, basecoat and (tinted) clearcoat needed to be coordinated precisely, resulting in a highly complex process. In the mid-1980s, pearlescent paints were introduced in the market and used in OEM coating. At least with regard to automotive shades, the 1980s and 1990s were decades which saw a rapid increase in the number of shades and effects used in automotive coating. This trend has continued to date.

Today, refinishers can choose among a wide range of low-solvent products, including the waterborne Standohyd Basecoat. High-solid paints and fast-drying UV paints, self-healing or dirt-repellent clearcoats are other systems that will determine the future of automotive refinishing.



Eye-catchers and exotic beauties.

The history of automotive colors.

From dark green carriage paint to "Pearl white" to "Inca orange" and "Reflex silver" – if you take a look back at the automotive colors of the past one hundred years, you inevitably slip into the zeitgeist of the respective period. What was all the rage in a given year was outdated shortly afterwards, only to become a coveted collector's item several years later. Above all, however, a journey through the history of color brings back memories of street scenes long gone and four-wheeled legends of yesteryear.



Black times.

Auto fans love to watch those old movies and TV crime shows simply because of the vintage cars. They enjoy the time machine effect of historical images as they allow them to return to times long gone. Those car models that would be impossible to imagine without their characteristic colors have arguably the greatest nostalgia factor – the VW Beetle in light blue, for instance, or the DAF 46 in Sahara yellow. Whenever old cars are displayed at exhibitions or vintage car meetings, they shine like icons of bygone eras in the eyes of the beholders.

At the beginning of automotive history, the color spectrum was actually quite confined due to the limited possibilities of coating technology. "You can have it in any color as long as it's black", said Henry Ford, who started assembly line production of the Model T in 1913, in response to his customers' wishes. After all, mass production did not allow for complex coating processes that would take days or even weeks. Fast-drying paints were needed. And at the time it was especially the newly developed nitro paint with the black pigments that offered excellent properties. But who knows – Ford's insistence on black may also have been driven by efficiency considerations alone.



Until the mid-1930s, OEM manufacturers offered only few color shades in red, blue and green – with major fluctuations in the shades. Only thereafter did technical progress allow them to offer a larger range of colors. The urea and melamine resins then used did not yellow as much and therefore enabled lighter color shades for stove-enamel finishes. In Europe, however, things became more colorful only when alkyd melamine resin paints were introduced after World War II. At the Paris Auto Show in 1946, visitors experienced an unprecedented variety of shades and colors.

Motor sport, which was still in its infancy at the time, was quite a colorful affair from the very beginning. In the first years of auto racing, each nation had its own specific paintwork color: the Commonwealth cars presented themselves in "British Racing Green",

while the French were blue, the Belgians yellow and the Germans white. Interestingly, the international regulations initially specified black for Italian cars, but "Rosso Alfa", the Alfa Red, quickly became the color of Italian cars – the famous Ferrari Red was developed on this basis only later.

Ever since the Gordon-Bennet Trophy races in 1900, white had been the classic German racing color. When, at the 1934 Eifel Grand Prix in Paris, the Mercedes cars exceeded the permissible weight limit by one kilo, the team manager simply had the complete paintwork scratched off the vehicle bodies. What appeared underneath was the silver shine of the aluminium, which immediately gave the Mercedes Benz racing cars their new name. Dubbed the "Silver Arrows", they raced to eternal fame. The look of today's racing cars is largely determined by their sponsors.





By contrast, the traditional look of the taxis in the big US cities has remained unchanged throughout the years. The "Checker Cabs" have always dominated the streets – those bright yellow cars with the chequered stripes on the sides and the roof that were built by the Checker Motors Company in Kalamazoo, Michigan, from 1922. They got their typical yellow color after a study by the University of Chicago revealed that the "Yellow Cab" taxi company had the cars with the most easily identifiable color. This is still the case in today's heavy traffic. The cabs feature in countless US movies, most notably in "Taxi Driver" from 1976.

The 1950s: Muted shades.

European traffic in the 1950s was far less colorful. In Germany, for instance, taxis were black and motorists preferred muted shades such as dark blue, green and black or they chose white and light grey or silver – colors that were very popular for reasons of road safety. Some also chose a silver finish because the Mercedes Silver Arrows were among the most successful racing cars of the decade. The general image of the colors reflected the trends of the time – a bright red was considered provocative and was more or less "reserved" for sporty cars.

Shortly afterwards, a trend towards two-tone finishes emerged, which lasted well into the 1960s. Usually, a muted color was combined with a clear one, e.g. for the roof. The use of chromed side strips resulted in a horizontal division of the vehicle body, which lent itself for the use of different colors. At Ford Germany, multi-colored cars were the most popular ones around 1960, for instance the grey-blue Type 12 M. Today, experts believe that the time of the two-tone finish was a phase of transition to the exclusive use of strongly pigmented clear color shades.

The 1960s: Some like it colorful.

Clear paints had previously caused problems as they tended to chalk and lose their shine. In the early 1960s, many cars therefore wore a "dress" of pastel colors – e.g. light blue or yellow shades. These were very much en vogue at the time and could also be found in other spheres of everyday life, for instance on kitchen cabinets or china. In any case, the days of the "grey in grey" on our streets were apparently over, with bright, friendly and rich colors gradually conquering the streets, although white/ivory/cream finishes continued to dominate until the late 1960s.



The 1960s were also the time of the candy-colored US limousines, which were the result of a "grassroots movement". Young Americans were bored by the factory finishes and took to the spray gun themselves, thus putting their ideas of color into practice. Influenced by advertising and young fashion, they produced such an overwhelming response that the auto industry followed the trend and adapted their OEM finishes accordingly. Some classic US cars even found their way into pop songs, e.g. in Marc Cohn's "Silver Thunderbird". Other cruisers also left their traces in pop music, usually in combination with an emotionally appealing color such as the "Pink Cadillac" (Natalie Cole) or the "Little Red Corvette" (Prince).

In 1967, the US hippie movement also found followers in Europe, to whom the car was no longer sacrosanct. Young people took their VW Beetle, their "Bulli" (VB Type 2), their "deux chevaux" (Citroën 2CV) or their Renault R 4 and redesigned them using loud colors till there was nothing left of the original finish. Just like protesting students and mini skirts, these "flower children" provoked the displeasure of large parts of the population, especially the vast majority of traditional motorists.

The 1970s: Courageous colors.

Only a few years later, factory-finished cars shone like never before; in 1971, the trend color white was only just ahead of red and blue, the whole scene became more colorful, the colors became louder, safety colors and metallic finishes were on the advance. Clear colors had finally beaten the broken colors. And even the hippies received some late satisfaction for their colorful preferences when traffic experts pointed out that multi-colored cars are the safest ones.

Following the trend towards more colorfulness, even renowned manufacturers offered loud colors, e.g. BMW's lemon yellow for the 5 Series. The looks of the 2 Series also testified to the Bavarian manufacturer's rather carefree attitude towards color – the cars were painted in orange.





The smaller, the more colorful.

Building on the wide range of experience gained, a "color theory" was developed already back in the mid-1970s and basically still applies today. In times of change and strong economic activity, people dare to experiment with colors, whereas in times of economic recession and a conservative zeitgeist, manufacturers and buyers tend to be more cautious and prefer inconspicuous color shades. As far as Italy is concerned, however, Ferrari Red has been a permanent fixture for many decades and survived the most diverse trends without major changes. Only the changeover to waterborne coatings some five years ago has slightly increased the blue content – which is not even visible to the bare eye, though.

Apart from the trends of the time, the size of the cars has also had an influence on the color; the smaller the car, the more colorful its paintwork – thus the general rule of thumb. In the 1970s, a trend towards designer finishes emerged, which was also followed by OEM manufacturers. In 1975, for instance, Opel used the slogan "unusual cars at unusual prices" to advertise its "Swinger" series – a Kadett, Ascona or Manta with a design in the form of a sun or stripes whose colors matched the basic color of the car.

After the temporary lull during the 1973/74 energy crisis, the year 1977 saw a genuine auto boom, during which the metallic finishes achieved a market share of over 30 percent for the first time and brought a host of new shades onto the scene. If you took a look around on a large parking lot or watched the traffic for some time during those years, you quickly got the impression that over half of all cars were painted in rather striking colors. Among them were combinations that were hardly accepted any more only a few years later, e.g. brown and beige, the third most popular shade behind red and green in 1977. Ford, for instance, offered a Fiesta with a beige finish and light green seats – a combination greatly appreciated by discerning Fiesta fans today.

The 1980s: The inconspicuous decade.

Airbrush art left its marks on the cars of some individualists, with fantasy, eroticism, landscapes and pop art among the most popular motifs. The wide mass, however, preferred inconspicuous colors. In 1987, for instance, grey jumped to the top of the list in some regions, boosting its market share to over 23 percent from just under 15 percent in 1983. By contrast, green and yellow clearly lost in popularity during the same time period.





Red, however, remained a very popular color. Drivers of VW's GTI loved the car's "Mars Red" and Audi also recorded strong demand for various shades of red. Up to the mid-1990s, the "signal color" stayed at the top of the list.

The 1990s: Red, blue or all at once.

At the beginning of the 1990s, things got really colorful again for some time in Germany, and particularly so in the eastern parts of the country. After the fall of the Wall in 1989, east Germans virtually rushed for cars in clear, shining colors. After all, the paintwork of their Wartburgs and Trabants had remained unchanged since the 1950s and offered only muted, pale shades with hardly any brilliance. Highly pigmented (read: expensive) clear colors had not been used by the GDR's auto industry for economic reasons.

The monotony on the streets in the 1990s was broken by a colorful exotic: the VW Polo "Benetton-Edition", which combined four colors on a single vehicle body. Opinions differed widely and ranged from "mixed up nonsense" to "absolute eye-catcher".

The fashion fad disappeared quickly. And since the year 2000, the formerly popular red has become increasingly rare on our streets. It was the time of

the grey and silver cars, which replaced green as the world's most popular automotive color. Whether it's South or North America, Europe or Asia: silver has been the world's No. 1 auto color since the year 2000 – longer than any other color before it.

In the meantime, experts are predicting a new era of "loud" colors for the middle of the decade. Things that were technically feasible already in the past years but were not put into practice out of consideration for the market now provided fresh stimulation for color design. The fresh orange of the Fiat Punto is a presentable example. Other possible trends include the "used look", which is well-known from denim fashion, or the combination of matt and shining surfaces on a single car body.

According to the experts, one color is sure to return - white. A traditional mourning color in Asia, where it is also popular for large limousines because of its discrete looks, white will soon set the tone also in other markets.



Better than the original.

Modern coating systems for restoration.



Nostalgia is not always a good counsellor when it comes to putting a new finish on an old "treasure". Not only because the use of solvent-based coatings is today prohibited in many countries but also because modern coating systems provide the best possible protection and perfect looks.

Since January 2007, all refinishing paints in the EU have had to comply with the Directive on Volatile Organic Compounds (VOC). The law makes exceptions only for genuine vintage vehicles designated by competent authorities as being of particular historical and cultural value. The VOC Directive specifies strict limits for the percentage of organic compounds that are released into the air during the coating process.

This is why waterborne paints and VOC clears are the No. 1 choice also when it comes to refinishing prestige or classic cars.

The motto therefore is: Spare parts do not turn an original into a copy. This applies to new windscreens just as well as to new paintwork. Originals change over time, even if they stem from another era.

Needless to say, there will still be customers who want a true-to-the-original finish for their old treasures, e.g. using pure nitrocellulose paints. They believe that modern "water colors" will change their car's special flair or

even reduce its value. They are afraid that the surface will lose its old shine, even if they polish it with passion. Unfortunately, though it often takes a long time to dispel such consumer prejudices. But in the case of Standox products, they are totally unfounded.

Standohyd Basecoat, for instance, is a waterborne basecoat system that can be combined with only Standocryl VOC Clears to form an environmentally compatible, high-performance two-coat refinishing system. Standohyd Basecoat is based on 64 mixing toners, which can be used to precisely formulate some 23,000 solid, metallic and pearlescent color shades – including all relevant current and "classic" vehicle colors.

Technologically, Standohyd Basecoats are far superior to historic paints. The special pigment composition, for instance, ensures high color accuracy. Moreover, they will not fade even under intense UV radiation, because the pigment binders are much more UV-stable than those contained in nitrocellulose or thermoplastic paints.

Where prestige and classic cars are concerned, however, the state of the art is not necessarily the measure of all things. Customers who have such a car restored invest their money in the preservation of a unique asset and in their longing for a unique four-wheeled experience. They attach great importance to coming as close as possible to the original details. Vintage car lovers therefore often choose the formerly so typical one-coat finish – at

least much more often than the owners of modern cars.

For these customers, Standocryl VOC-Autolack from Standox is an attractive alternative. The 2K topcoat system is particularly well suited for solid green, beige and blue shades and consists of 23 mixing toners based on state-of-the-art pigment and resin technology, which allows it to meet the highest standards in terms of quality and looks.

This also applies to the special patina of historic coatings. With the help of matt paints and polishing techniques, even the weathered shine of old paintwork can be simulated. Here, it takes a lot of expertise, experience and the well-trained eye of an expert.

All this shows that when it comes to repairing prestige or classic cars, you need not ignore today's technological and ecological standards. On the contrary, Standox refinishing paints enable you to meet the high expectations of your customers and the strict environmental laws and regulations at the same time.



Careful with bare metal!

Protecting historic vehicle bodies.

When it comes to restoring historic vehicle bodywork, sustainable corrosion protection takes top priority. It is therefore extremely important to avoid any contact between the stopper and the bare metal.

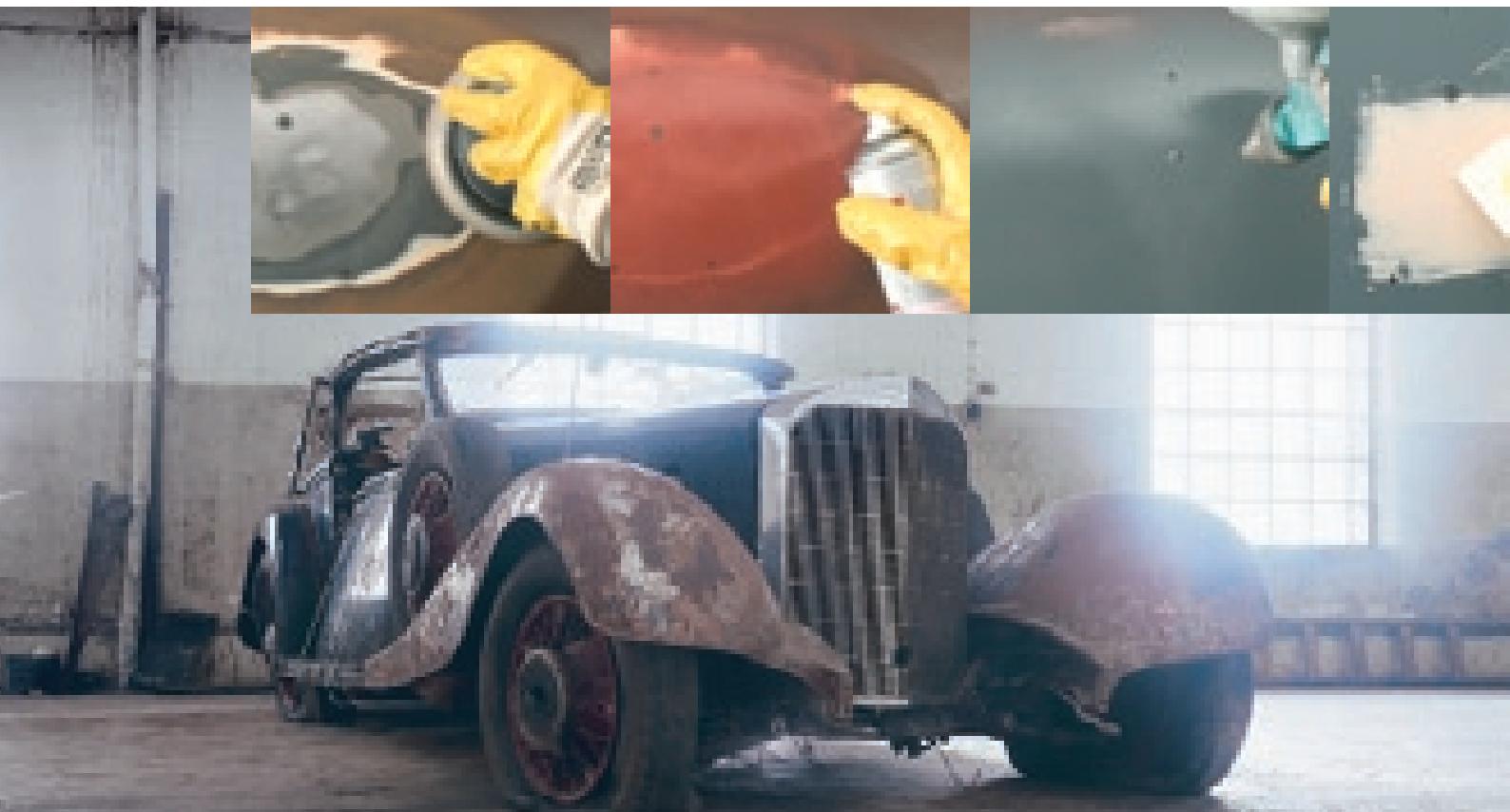
Times are changing. Also in the body manufacturing sector. How else could you explain the fact that today's car makers grant a 12-year warranty against rusting through? By contrast, the sheet metal of older vehicles often suffers heavily from moisture and humidity.

When it comes to refinishing a prestige or classic car, sustainable corrosion protection therefore plays an all important role.

Until the 1980s, plastics and aluminium were only rarely used in the automotive sector. Vehicle bodies were mostly built from sheet metal, whose worst "enemies" on the road were rain from above and dirty splash water from below. The consequence: Quite a few cars had to be scrapped because they had turned into dilapidated and ugly "rust-heaps".

One of the main reasons why the owners of prestige and classic cars have their cars repaired is their wish to save them from the same fate. After all, it is much easier today to protect the vehicle bodies against corrosion than it was decades ago. Nevertheless, corrosion is an omnipresent danger – even where you wouldn't normally expect it. It was above all the chemical properties of the former generations of sheet metal that made it easy for the rust to spread. Over time, even tiny rust spots unfolded their full destructive power.

It is important to counter the risk of corrosion already when preparing the substrate. Always apply a thin insulation layer between the bare metal and the stopper. Otherwise, the stopper acts like a dry sponge that absorbs the water and passes it on to the metal.

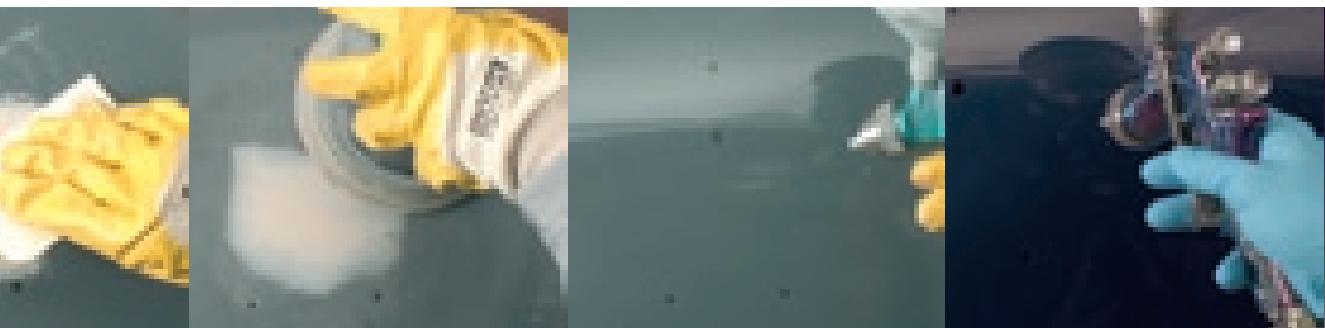


Standox recommends a two-coat build-up consisting of an acid primer and a 2K filler. The acid primer has a passivating and corrosion-inhibiting effect. In combination with the 2K filler, it also provides excellent adhesion to the metallic substrate on the one hand and to the topcoat on the other hand. The 2K filler isolates sanding marks and pores and helps to even out the surface. It is the ideal basis for the topcoat.

But be careful! Modern coating technology alone cannot guarantee the long life of a prestige or classic car. Instead, it is important to carry out all steps of the refinishing process with utmost care. This also means that an insulation must be repeated as soon as the damaged body part is sanded through to the bare metal – even if this happens only in tiny areas.

Bare metal should be insulated with Standox acid primer and Standox 2K filler in accordance with the specifications of the respective Standox coating system.

Plastic parts are also exposed to wear and tear and will age over time. Until the 1980s, however, PVC and ABS components were used much more rarely than is the case with modern cars. Integrated front and side parts made from hard plastic are an invention of the more recent past. The spoilers, grilles, bumpers and mudguards of prestige and classic cars were components in their own right, which were built like the rest of the car – from real metal.





A question of insulation.

Old paintwork as a substrate.

When applying 2K acrylic fillers over such finishes as nitrocellulose or thermoplastic paints, there may be a subsequent loss of adhesion.

When refinishing substrates that are sensitive to solvents, an epoxy resin primer filler is therefore a good alternative.

Is the old paint stable? And can I overcoat on top of it? These are two critical questions professional refinishers should ask themselves before spraying a modern refinishing paint onto historic paintwork.

After all, historic cars were often coated with nitrocellulose or thermoplastic paints. Both paint types may wrinkle off the metal if they get in contact with solvents, e.g. contained in a 2K acrylic filler. This will have an adverse impact not only on adhesion but also on the looks of the entire finish. This kind of old paintwork is therefore not always a suitable substrate for a second finish.

To find out whether the old paintwork is sensitive to solvents, Standox recommends to conduct the solvent test, which delivers quick and reliable results.

In the best case, the old paintwork shows no reaction, i.e. it does not become soft and does not come off but stays as hard as before. This substrate can then be refinished without any risk in accordance with the Standox recommendations.

In the worse case, the old paintwork reacts to the solvent by becoming soft, swelling or coming off entirely. As a result, it will no longer adhere to the substrate. You will then have to remove the paint from the complete body and explain to your customer that they will incur additional costs.

Should your customer be unwilling to bear these additional costs, Standox has a professional alternative to offer. Sheet metal covered by an old paint that is sensitive to solvents can be insulated using an epoxy resin primer filler without any loss of quality. Combining a primer and a filler, it is less aggressive on the old paintwork and is equal to a 2K acrylic filler in terms of filling power and topcoat gloss. It thus forms an excellent base for the subsequent application of the topcoat.

When it comes to drying refined sensitive paintwork, you should also deviate from your usual routine. After all, the paint may be thermoplastic, in which case air drying is the safest alternative.

Thermoplastic paints were introduced in the 1940s – above all in the USA – when they replaced nitrocellulose paints. The latter were easy to spray and dried fast but also had to be polished thoroughly after application. By contrast, thermoplastic paints shone like new immediately after drying.

However, they are not very suitable as substrates for a modern repair, as they will become soft both when getting into contact with solvents and when exposed to extreme heat. Given that a soft substrate and a solid refinishing paint will work against each other, there is a risk of cracks forming.

Should you be in doubt about the type of substrate at hand, Standox therefore recommends air drying instead of oven drying. While this will take a bit longer, it is certainly the safer option. This method is also clearly preferential from the customer's point of view, because investing a few hours here means that they can be sure for their "old treasure" to make an excellent impression for many years to come.





Nothing's impossible.

Finding the right color shade.

Sometimes it's done quickly. Sometimes it takes a bit longer. But even where the most unique classic cars are concerned, Standox will help to find the right color formula.

With many vintage cars, only the original color can bring back the "good old times". After all, what would a Ferrari 250 GT Berlinetta be without its rich red? Or a Mercedes-Benz 600 without its deep black? In former times, however, these colors were not documented as precisely as this is the case today. As a result, many original colors cannot be found in any of the world's archives.

Other vintage cars, in turn, have been exposed to a lot – a lot of sunshine, a lot of rain, a lot of summers and a lot of winters. They have therefore lost their paint in some places and the weather has left its marks. The problem is that the patina acquired over the years makes it difficult to identify the original color.

These are just two reasons why Standox recommends to use Genius and Standowin for the color search.





The combination of a colorimeter and a color identification software needs no long-term memory to identify a solid or special-effect color. Instead, it measures the color on the spot and delivers a formula that you can transfer directly to your Standox mixing system.

Genius is a spectrophotometer, which can read colors and shades directly on the cleaned vehicle body. Given that three angles are measured at the same time, the results are extremely precise. This handy device identifies pearlescent effects just as reliably as solid and metallic color shades.

After the measurement, the Standoxin software checks the results against familiar colors. Far more than 30,000 reference values have been stored digitally, with the software updated at regular intervals. In most cases, the system therefore delivers the matching Standox mixing formula straight away, which can be transmitted directly to the electronic scales for precise mixing.

Should the color not be a 100 percent match, the software allows you to correct it manually. Differences between the original color and the color determined by the software can easily be eliminated with the help of digital color adjustment and the modified formula can then be saved in a database. This way, important information for follow-up orders is stored safely. As you see, Genius and Standoxin help you serve your customers quickly.

But be careful! Even the best technology cannot replace the well-trained eye of the expert. As with every repair, you should therefore spray a color sample first once you have mixed the paint. Because only the human eye can tell in daylight or under the daylight lamp how close you have come to your target color and whether you need to re-adjust the color. We recommend to note down the mixing formula on the sample sheets and store them so that you will later have quick access to all relevant information.





In any case, the combination of Genius and Standoxin is the quickest and most reliable solution to identify a color shade. Incidentally, this also applies to more recent colors – and thus also to new cars.

Other methods of determining the right color shade are much more complex. The easiest way is to find the type label directly. It shows the color code (a combination of letters and/or numbers), which will help you to identify the right color formula. The color database on your local Standox website will show you the way.

This also applies if you cannot find the type label straight away. In this case, the manufacturer's location sketches, which can also be downloaded from the Standox website. They will show you where the type labels of the individual makes are normally located.

If this information does not get you anywhere, you should gather everything you know about the vehicle and start an expert research with the help of the Standox color database. Information about the manufacturer, the model family and the year of construction often helps to track down the original color of a prestige or classic car quite precisely. In this case, you benefit from the fact that car makers in earlier times didn't change the colors of their OEM finishes as frequently as today.

Sometimes, however, the devil is in the detail. In this case, the experts from the Standox Color Service will be pleased to assist you. This even applies if there is too little of the original paint left on the body to determine the color shade with the help of Genius and Standoxin. Based on a tank cap or glove-box lid painted in the original color, the Standox team will identify the right formula for you. In this case, you will need some patience, however, as the analysis may take "some time".

The Standox tip: When refinishing a prestige or classic car, always identify the right color shade first. This will avoid losing valuable time in case of doubt.







Back to the future.

Old cars for new business.

Prestige and classic cars are special cars – and their owners are special customers. They usually have not only a lot of passion but also a lot of time. The business-minded refinisher should therefore excel in more roles than one.

If you build your business on several pillars, you will achieve a high capacity utilisation of your shop even in times when business tends to be slow. This also applies to paintshops. The refinishing of prestige and classic cars is the ideal source of additional income.

After all, business in the traditional fields follows a seasonal pattern. In the north for instance, new cars are normally not refinished during the winter, as their owners prefer to wait for roads to become safer again in the spring. Commercial customers such as metal engineering businesses or carpenters, on the other hand, usually require the services of a paintshop only at peak times – but almost never during vacation time.

Experience has shown that the owners of prestige and classic cars are different from the rest. For instance, because they buy their first car again when they go into retirement. Or because they are collectors and have finally found a specific car after a long search. In any case, the car they deliver to your shop is an old dream come true.

What they don't do, however, is drive the car a lot – maybe occasionally on summer weekends but never in the winter. What is much more important to them is the desire to make an old original shine like new. Therefore, sometimes a few weeks of downtime don't really matter. The main thing is that the result is right.

If you succeed in winning over this clientele, you have the chance to maximise the capacity of the bodyshop. This will reduce the pressure on your budget, keep your staff busy and may even lead to more customers. Because if you can restore old cars to their original shine, you are also the No. 1 choice for new cars. And after all, owners of a vintage car do not only have old cars.

However, these customers also tend to have a lot of passion and expect "their" paintshop to show a lot of attention. As a successful refinishing expert, you have to live up to these demands in more ways than one.

As a paintshop owner, you offer them the perfect infrastructure for vintage car repairs – high-quality equipment, qualified staff and an attractive presentation that shows your customer nobody else is better at refinishing prestige and vintage cars than you. An informative website, customer references and this Standothek may also be useful instruments.

As a consultant, you take your customer from dream to reality. You know that you have no standard problems to solve but a very specific task, which not even the customer may be fully aware of at the beginning. It will take one or several personal meetings to make a realistic definition of the final goal, the way that will take you there and the expenses involved. Together, you will have to answer questions such as: Does the complete car have to be refinished? Or will a partial respray be sufficient? What is the existing finish like, is it totally flat or does it have a slight structure like a modern car?

As an expert, you will offer your customer an experience of utmost care and maximum precision. These can be demonstrated most effectively by making impressive preparations for important decisions. When it comes to choosing the right color, for instance, you will spray half a dozen sample sheets and choose the right match together with your customer. In doing so, you will never lose sight of the overall picture. Because a "high gloss" finish may look good on a Cadillac but it certainly looks kitsch on an old VW Beetle.

As a service provider, you present your customer with a customised offer. That means that you make sure they can monitor the progress made.

Always remember: Vintage car lovers may be a strange clientele, but they can do you a whole lot of good if you win them over.





In good hands.

The Mercedes-Benz Classic Center.

Gottlieb Daimler and Carl Friedrich Benz made automotive history. In Fellbach near Stuttgart, Standox coatings are therefore used to make dilapidated vintage cars shine like new again.

What if the two pioneers had not joined forces? In 1883, Gottlieb Daimler obtained the patent for the "gas engine with hot tube ignition", thus laying the foundation for the fast-running combustion engine. Three years later, Carl Friedrich Benz acquired the rights in the "automobile" – at the time a three-wheeled vehicle with combustion engine and electrical ignition. In 1926, their companies, "Benz & Cie." and "Daimler Motoren Gesellschaft" merged to become



"Daimler AG" – a company that built many cars that would later become legends.

Among the cars that will never be forgotten were

- the "Great Mercedes" 770, which became an internationally accepted state carriage in the 1930s.
- the "Silver Arrows", which dominated the pre-war Grand Prix at will.
- the 300 SL "gullwing", which became the dynamic expression of the German economic boom.
- the 600, whose length of 6 metres literally took modern car making to a whole new dimension.

Today, the Mercedes-Benz Classic Center in Fellbach near Stuttgart looks after all these classics. Throughout the world, the company is considered the "port of call" for owners of classic Daimler, Benz, Mercedes and Mercedes-Benz cars. It serves not only the Mercedes-Benz Museum but all customers who want to preserve the original state of their Mercedes-Benz.

The customers of the Mercedes-Benz Classic Center benefit from direct access to all of the manufacturer's key resources. These include, among other things, the comprehensive company archives, the R&D facilities, the experience gained from prototype construction and state-of-the-art technology to reproduce old vehicles true to the original.

The workshop of the Mercedes-Benz Classic Center restores, repairs and services all vehicles, including precise diagnosis and cost estimates. This applies to all Daimler, Benz, Mercedes and Mercedes-Benz cars sold since 1886 – with no exception whatsoever. The refinishing work is based on the Refinishing Guide developed in cooperation with Standox. Apart from overall and partial restorations, the Center's workshop also carries out individual repairs and rebuilds engines, transmissions, axles, steerings and other components if they can no longer be sourced from the 40,000+ original Mercedes-Benz parts on stock.



Needless to say, all classic cars on display in the showroom of the Mercedes-Benz Classic Center are first put to the acid test in the workshop. This also applies to the historic convertibles in Classic Events' pool of rental cars. These vehicles, which can be rented for private tours from April until October, are serviced at regular intervals by the specialists in the Center's workshop.

Owners of vintage Mercedes-Benz cars in the USA now benefit from first-class lifelong service as well – in February 2006, the first Classic Center was opened in Irvine, California, in close cooperation with Mercedes-Benz USA.

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Further information.

Standotheks.

- Perfect substrate preparation for brilliant results.
- Plastics and how to finish them.
- The quick way to a perfect color match.

Standox brochures.

- Standohyd – A brilliant future for your bodyshop.
- Expertise in color.
- Genius – Fast and efficient color matching.

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