



The perfect finish for a classic Mercedes-Benz.

An Axalta Coating Systems Brand



The Art of Refinishing.

The perfect finish for a classic Mercedes-Benz.

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Preface.



What would a car be without its paintwork?

Protection against corrosion and weathering - this might sum up the benefits of our products. Yet our ambition is to do more than protect cherished vehicles and maintain their value. We want to be instrumental in preserving a culture and a way of life in conjunction with like-minded enthusiasts. For more than half a century our company has developed high-quality automotive paints responding to steadily changing market needs.

Nowadays, the proud owners of a classic Mercedes-Benz car are mainly interested

in one thing: increasing the value of their vehicle by maintaining its original condition as far as possible. This is why you are well advised to contact a Mercedes-Benz Classic partner in your vicinity in order to ensure a perfect repair using original Mercedes-Benz parts.

To live up to our responsibility as a paint manufacturer, we have joined the Mercedes-Benz Classic Center in preparing this refinishing recommendation that ensures maximum originality while meeting today's

technical and environmental requirements.

Looking back on more than sixty years of tradition, we feel privileged to share this passion for fine automobiles with you.

Cordially yours,

A handwritten signature in black ink, appearing to read 'O. Adamek', with a stylized flourish at the end.

Olaf Adamek
Standox Brand Manager

History. Factory finishes from 1945 until today.



After World War II, 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. Primer and filler were applied in a high-pressure spraying procedure, even though individual manufacturers already dipped their bodies-in-white by the late 1950's. Nitrocellulose paint was used 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 refinishing up until today. Soon after their introduction, they dominated the paints market in the field of refinishing too.

New materials for paints.

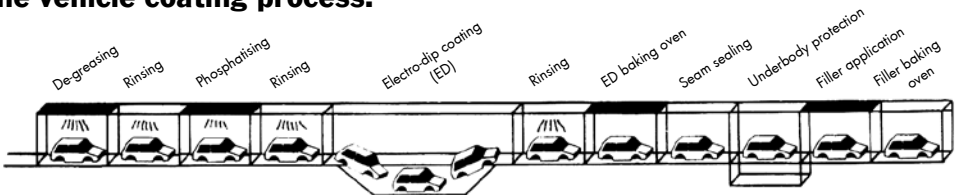
From 1963, polyester was the new material available to the paints industry. Polyester became indispensable particularly as a basis for stoppers, while nitrocellulose and synthetic resin stoppers became less important. The ingredients of topcoats changed, too. Alkyd resin paints were now mixed with isocyanates that accelerated drying even at room temperatures compared to alkyd melamine resin paints. Forced

drying in a combined spray booth and low bake oven enabled the refinisher 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 acrylic 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 1970's, the paint manufacturers also developed a primer filler that protected against corrosion to make special corrosion protection paints superfluous.

In the 1980's and 1990's, paint finishing remained one of the most time-consuming processes in automotive pro-

The vehicle coating process.





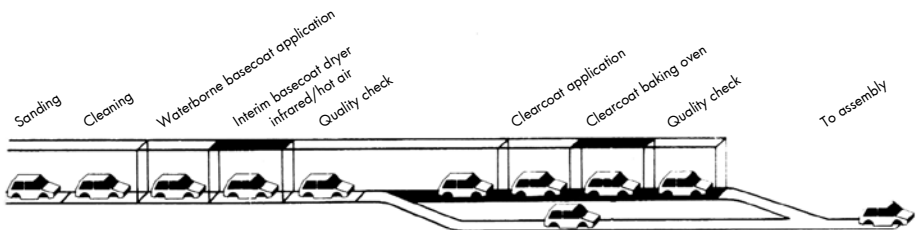
reduced, because these substances are blamed for causing summer smog and other nuisances. 2K acrylic paints were developed further into low-solvent high-solids, i.e. paints with a lower solvent content and a higher share of solid particles. The mid-eighties also saw the launch of the first waterborne paints, which have since become the standard type of paint both in OEM coating and refinishing.

duction. 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 is actually applied to where it belongs, on the automotive body.

Since the mid-1980's, 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 1980's, a number of hazardous paint ingredients were replaced as paint manufacturers increased their environmental awareness. In addition, the share of organic solvents in the paints was



The development of automotive refinishing.



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.

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 1960's, nitro-combination paints were used by bodyshops that did not have a combined spraybooth and oven or "combi-oven". An alternative to this was the 8 °C refinishing paint, which was particularly suitable for the multi-layer coatings that were popular in the 1950's 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 1960's a fundamental change came up in the field of undercoat materials. 2K epoxide materials were used increasingly as primers, primer-



surfacers and fillers, first in the commercial vehicle segment and later on in automotive refinishing.

Whilst 70's 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 colours 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 1980's. A tinted filler, basecoat and (tinted) clearcoat needed to be coordinated precisely, resulting in a highly complex process.

In the mid-1980's, pearlescent paints were introduced in the market and used in OEM coating. At least with regard to automotive shades, the 1980's and 1990's 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 with a high solid content, including the waterborne Standohyd Plus and Standoblue Basecoats.



Expertise and craftsmanship are key to an excellent refinish.

Refinishing classic Mercedes-Benz vehicles.



Classic vehicles with the legendary star on the bonnet are recognised as genuine works of art nowadays, but in contrast to precious paintings, they require regular, careful and in particular professional care or restoration. This is the only way to maintain their value or even increase it over the decades.

The most striking feature of vintage cars is of course their body. It needs to be restored and maintained using state of the art methods so the owners can enjoy their vehicles for a long time to come.

The older the paint on a vehicle, the simpler its structure. As a general rule, an original vintage paint coat consists of a single layer of so-called nitro-cellulose paint. Auto makers have long stopped using these paints. In the 1960's, they were replaced by paints on acrylic bases with a higher gloss retention and solvent content. These paints have meanwhile been replaced by waterborne products.

This is why the Mercedes-Benz Classic Center in Fellbach and Standox have jointly prepared a manual for refinishers. The refinishing process described here defines the standard for high-quality vintage car refinishing as recommended by the Mercedes-Benz Classic Center.



Restoring a classic with modern paint systems?

Before refinishing a vintage car, the owner has to decide jointly with the refinishing expert whether it is to be a renewal, a partial refinish or a complete respray. If the owner desires a renewal or a partial refinish, the refinisher first has to determine the kind of paint that the vehicle is finished with. Rubbing the surface briefly with a cloth soaked in cellulose thinner makes things clear: the colour of a nitrocellulose paint or a thermoplastic acrylate paint (TPA) comes off very strongly in the process and becomes a little tacky.

TPA paintcoats are very soft. Refinishing with a very hard two-component acrylic paint is not possible, as there would be tension between the two layers of paint. This is why the old paint coat must be removed down to the bare metal.

Synthetic resin paints that were common until the 1980's cannot be coated with modern acrylic paints as they release solvent for a long time. Here, too, the old paint coat should be removed completely. If a

vehicle has had several total resprays or refinishes, it is also advisable to remove all layers by sanding or stripping. Otherwise, corrosion under the paint may go unnoticed.

Only modern paint systems are permissible today.

Nowadays, modern automotive coatings comprise up to six layers. In recent years, the focus in development and application was on reducing the solvent content. January 1, 2007 saw the coming into force of the new EU solvent directive that defines stricter limits for the emission of solvents into the environment. Now refinishers are obliged to use only those materials that comply with the new regulations.

Standex offers a state of the art waterbased refinishing system, Standoblue, as well as an accurate colour and effect measuring device, Genius iQ. This combination allows the reproduction of original shades with modern pigments, which are often much more light-fast and -stable than the old pigments.

Finding the right shade.

Determining the right shade is a particular challenge in vintage car refinishing. After all, there are more than 50,000 OEM coatings worldwide, and another 600 are added each year. Moreover, the paint changes over the years due to environmental influences.

Younger vintage and classic cars display the code of the vehicle as a combination of numbers and/or letters on the type label.

In case of older cars with traces of the original coating, only an analysis using the colour and effect measuring spectrophotometer will give reliable information.

Determination of the shade with the Genius iQ colour and effect spectrophotometer



The Mercedes-Benz Classic Center – Life-long service.



Ever since its foundation on May 19, 1993, the Mercedes-Benz Classic Center in Fellbach near Stuttgart has been the port of call for owners of classic vehicles from the Daimler, Benz, Mercedes and Mercedes-Benz brands – on a global scale.

The workshop of the Mercedes-Benz Classic Center not only looks after the historical and more recent automobiles dis-

played in the Mercedes-Benz Museum. The staff's unique technical and historical expertise is also made available to all customers of the brand who wish to retain their Mercedes-Benz cars in their original condition.

All customers of the Classic Center benefit from the latter's direct access to all the relevant resources of the company.

This includes not only the comprehensive documentation in the Corporate Archives but also the facilities in Research and Development, the plants' expertise in prototype manufacture and the latest technical possibilities for reproducing true-to-the-original parts.

These factors contribute towards retaining the originality and historically authentic engineering of classic cars – the prime guarantor being the workshop of the Mercedes-Benz Classic Center.

Quality, safety and originality are accorded top priority in the workshop of the Mercedes-Benz Classic Center.





This is where classic cars from the Daimler, Benz, Mercedes and Mercedes-Benz brands are restored, repaired and serviced, always on the basis of a precise diagnosis and cost estimate. These services are, without exception, available to all models of the brands built since 1886. In addition, the workshop specializes in the pre-war supercharged models, the 600 and all models from the 300 series including the 300 SL Gullwing.

The customers' classic cars are handled with the same devotion and expertise by highly qualified staff as the museum's dream cars with which they rub tire shoulders in the workshop.

After restoration at the Mercedes-Benz Classic Center, a Daimler, Benz, Mercedes or Mercedes-Benz always remains an original. The Center's workshop not only engages in complete or



partial restorations, however. It also repairs individual components and rebuilds engines, transmissions, axles, steering systems and other assemblies if these are no longer available from the stocks of over 40,000 different genuine Mercedes-Benz parts.

Your classic is given the same devotion and expert care by highly qualified staff as the museum's dream cars.





Owners of classic Mercedes-Benz cars do not always have to take their vehicles to Fellbach. They can turn to over 500 Mercedes-Benz sales and service outlets as well as authorized partners in Germany to obtain support in procuring replacement parts and literature.

The same applies to classic-car partners in France, Belgium and Switzerland. At 19 of these outlets in Germany,

From April through to October, eleven historical Mercedes-Benz convertibles can be rented for private outings from the Mercedes-Benz Classic Center.

an extended range of services is offered. These outlets employ specialists with the relevant expertise and skills and operate the facilities required for a classic-car workshop. They are able to provide competent advice in all questions relating to engineering, care, repair and originality, and closely coordinate their activities with the

experts in Fellbach at all times. The Mercedes-Benz Classic Center nevertheless remains the primary port of call for complete and partial restorations.

Since February 2006, owners of classic Mercedes-Benz cars in the USA have had their own port of call for service. In close cooperation with Mercedes-Benz USA, the first US Classic Center was opened in Irvine, California, in February 2006. This ensures life-long service for Mercedes-Benz classics in the USA as well.

Another service rendered by the Mercedes-Benz Classic Center is the compilation of expert reports on the originality of a classic car, including a description of its condition



and documentation for all vehicles produced by the company since the invention of the automobile in 1886.

Over and above this, all classic cars are thoroughly checked through before being offered for sale in the showroom of the Mercedes-Benz Classic Center. The same applies to the historical convertibles included in the Classic Events' pool of rental cars. These cars, which can be rented for private excursions from April through to October, are regularly serviced by the workshop experts.



From April through to October, eleven historical Mercedes-Benz convertibles can be rented for private outings from the Mercedes-Benz Classic Center.

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Mercedes-Benz Classic Center
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Opening hours: 9 a.m. - 5 p.m.

The Mercedes-Benz Classic Center in Fellbach near Stuttgart is the port of call for friends and owners of classic Mercedes-Benz vehicles from all over the world.



Repair of genuine vintage cars. Consult an expert!



Modern paints are superior to the original paints with regard to mechanical and UV-resistance.

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 those 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.

Nowadays, the choice of the "right" or ideal paint is a hotly

debated topic among the owners of vintage cars. Does it make sense and is it permitted to have the Mercedes-Benz "Ponton" coated with nitrocellulose paint as the original? Or is it more important that the car looks good, i.e. like new after the restoration? As a general rule, not all original paint qualities are available today. The original oil-based paint is recommended only for genuine historical rarities or museum cars. For all other vehicles, modern and environmentally

compatible paint systems have to be used. Nevertheless, classic cars, which are not refinished with expertise or with the wrong shade, may lose considerably in value. Which is why they should always be refinished by a competent bodyshop.

A vintage car should not be repaired by an amateur – no matter how enthusiastic he is. The health and safety requirements and the reliable repair of all systems with a relevance to safety can only be guaranteed by an authorised Mercedes-Benz workshop. Here, the paint finish will be

performed to the required standards. High quality paint systems must be applied by skilled specialists.

Therefore, we recommend that you always contact an authorised Mercedes-Benz bodyshop and/or qualified refinishers

like the Repanet bodyshops which exclusively use the paint systems approved by Daimler AG.

Qualified bodyshops in your vicinity can be found at www.repanet.com.

Modern paints are superior to the original paints with regard to mechanical and UV-resistance.

A Daimler, Benz, Mercedes or Mercedes-Benz car remains an original even after its restoration in the Mercedes-Benz Classic Center.



THINK COLOUR. THINK STANDOX.

When it comes to accuracy and matching, Standox offers unique colour competence. As a leading partner to OEMs for over 60 years, we also have the knowhow and advanced products to support bodyshops to deliver the highest quality service. Find out more about how we've become Number One for colour at:



www.standox.com/think-colour



The Art of Refinishing.