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Matt finishes

Vehicles with matt finishes are currently in fashion. A shimmering satin or dull matt surface gives a vehicle a special style and makes it stand

out from the cars with gloss finishes. However, repairing matt finishes poses particular challenges for bodyshops.

Repairs require precise preparation and considerable professional skill. Correcting potential errors also involves a significant amount of effort. What is common practice for high gloss clearcoats is out of the question for matt paint finishes. Re-sanding or polishing are not an option. Refinishers can only make one attempt.

Ensuring there's no shine after the repair.



Even small repairs are a challenge when it comes to matt paints.

With matt paints, it is not possible to polish out small scratches on one of side of the vehicle or fingernail traces from the handle recesses. That would result in shiny spots or streaks – visual defects on an otherwise evenly matt surface.

MicroRepairs and blending in also are not suitable, as they would both mar the general appearance.

To avoid this from happening, when refinishing matt paints, the entire body part is always painted.

Depending on where the damage is it may even be best to repaint the entire side of a vehicle.

Care and precision – essential for an outstanding result.

Refinishing matt surfaces is more time-consuming and requires more material than refinishing gloss finishes. But with the right preparation, the necessary care when working, and the right products, it is possible to achieve impeccable results.

What matters more than anything else is working accurately. Even the smallest deviation from the mixing ratio between clearcoat, hardener, thinner and matting agent can lead to a discrepancy in the degree of matting, and the required volumes for a total or partial re-spray should be weighed out accurately using the scales.

The use of Standowin or [Standowin iQ](#) makes precise measuring easy. Being completely accurate is also important for the documentation and potential later adjustments.

The effect of film build and drying on matt paints.

Before starting to refinish matt paints, the effect of different film build on the appearance of the dried paint film should be considered. Application methods must therefore be adapted to the circumstances.

- Two "normal" spray passes may look different after drying, in some circumstances, compared to two "full" ones.
- Correct flash off is very important: in order to avoid "patchiness" the intermediate and final flash-off times given in the [Technical Data Sheet](#) should be strictly adhered to.
- Even the manner and type of drying method plays a role in the repair of matt clearcoats. Air and forced spray booth drying have a different effect on the gloss level. Finishes dried in the spray booth are generally slightly glossier than those that are dried at ambient temperatures.
- Infra-red drying should be avoided completely.

Background knowledge/information.

How are the perception of colour and the general impression of a matt surface created?

The colour impressions of an object are the result of nerve impulses in the viewer's brain. The human eye receives colour stimuli via the retina, relays them to the brain and in so doing, triggers a certain colour perception.

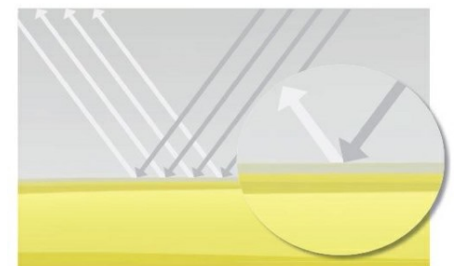
That part of the light spectrum, which is not absorbed but reflected by the surface of an object, supplies the data that our conscious mind attributes to a specific colour.

Reflection is also the reason why our eye perceives a surface as glossy or matt. Certain clearcoat additives increase the diffusion of light to such an extent that the surface appears matted.

What influences matt colours?

The appearance and gloss level are influenced by:

- the coating thickness of each spray pass or the overall film build
- the way in which the paint is sprayed – for example with full or limited saturation, at a large or small spray gun distance, in straightforward lengths or in criss-cross pattern



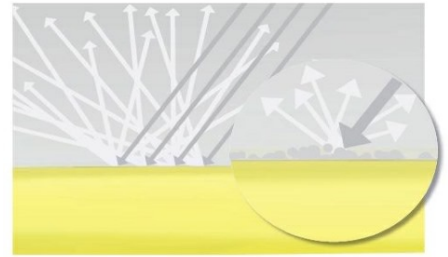
Light reflection on a glossy clearcoat (simplified illustration, as effect pigments also have a scattering effect, although only in the basecoat paint).

- the intermediate or final flash-off time and the colour
- the temperature and type of drying (air or spray booth)
- the spray booth or paint temperature during application
- hardener and thinner

The degree of gloss increases with the use of short hardeners and thinners, with greater spray viscosity, thicker coats and forced drying.

The degree of gloss decreases with the use of longer hardeners and thinners, with a lower spray viscosity, reduced coating thickness and air drying. As humidity also has an effect on the end result, we recommend avoiding ambient air drying when refinishing matt paints!

These arguments show that the gloss level of a repair can only be determined by creating a spray sample!



Light reflection on a matted clearcoat (matting agents contain ball-shaped particles that have a strong scattering effect). Viewed at an angle of 60°, the reflection is at its most even. That is why the gloss level of car paints is measured and recorded at this angle.

What you should pay attention to when refinishing matt paints.



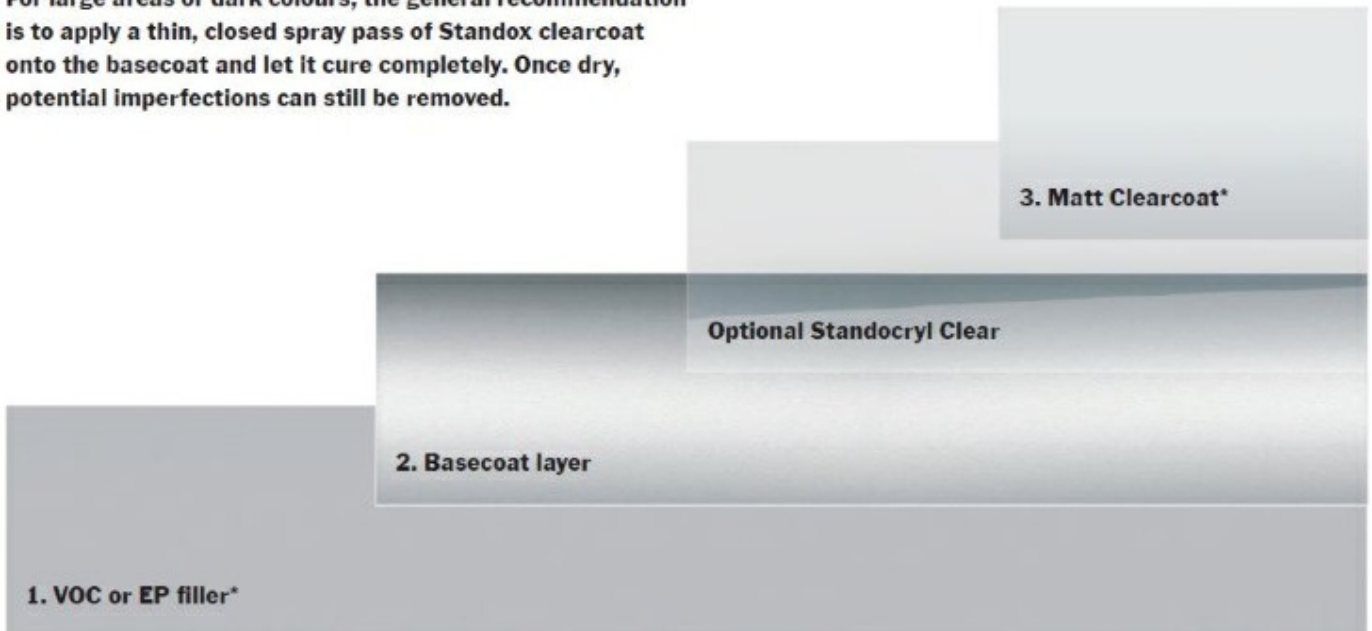
As there are many factors that influence gloss levels, it is not possible to give a pre-defined gloss level. There are measurable differences even for OEM finishes. In practice that means that it is not possible to achieve uniform results in a bodyshop where conditions change on a daily basis. A larger object should therefore not be refinished over several days and with different product build ups. To achieve a uniform appearance refinishers should paint in one go.

For technical reasons dust inclusions cannot be polished out of matt paints. Instead, they would require a complete re-paint including basecoat. Depending on the object, colour and desired gloss level we recommend finishing the paintwork with a gloss Standocryl VOC Clear.

All refinish paints will still contain traces of solvent once dry. With matt paints this means that the final degree of gloss is not quite attained immediately after drying. Measurements show that gloss levels can fall by up to five per cent within the first 14 days after the paintwork is completed.

Treat all fresh matt paints with the greatest care. Currently, damage to surfaces can only be reactivated by a total re-spray. Contamination, for example with grease, adhesives or sealants, must be removed immediately with solvent-free cleaner. Do not use any solvents!

For large areas or dark colours, the general recommendation is to apply a thin, closed spray pass of Standox clearcoat onto the basecoat and let it cure completely. Once dry, potential imperfections can still be removed.



* In accordance with manufacturer approvals

Preparation of sample panels.

1. First determine the gloss level, then the colour.

The gloss level has a significant effect on the appearance of the colour. Therefore first paint a spray sample with different ratios of Special Matt to VOC HS Clearcoat K9520. Begin with a mixture of 80:20, 75:25 and 70:30 (under certain circumstances smaller increments may be useful). You will find the precise formulas in [Standowin iQ](#). Then refine your selection of the colour (potentially produce variants). Pay attention to clear marking of the spray samples.

Note: The spray samples must be prepared using the same spray



Which mixing ratio produces what gloss level (E = units of gloss)?

- 70:30 > 25 E at a 60o angle
- 75:25 OEM recommendation, for example MB 23 E at a 60o angle Tolerance +/- 7 units
- 80:20 < 15 E at a 60o angle or < 20 E at an 85o angle

The formula for the right mixing ratio can be found in Standowin iQ in the section title "ANCILLARY PRODUCT MIX" under products "SPEC MATT".

Standex Special Matt must be stirred thoroughly immediately prior to use. The clearcoat/Special Matt mixture must also be stirred carefully before adding the hardener. Just like other matting additives, Standox Special Matt can, in principle, be used with all Standox clearcoats.

As the clearcoats all have different properties and mixing ratios, we recommend using the Standocryl VOC HS Clearcoat K9520 from the Standox refinish range. Only the VOC HS Clearcoat K9520 has the best basic properties for this particular type of application and is approved by the major car manufacturers for refinish work.

Refinish process.

With a matt clearcoat, it is not possible to blend in sections. It is only possible to refinish complete body parts. These should be carried out by two refinishers who should avoid overlapping. All spray and drying processes should follow the same procedure used for the selected spray sample. Even small changes can distort the result. The more matt a matt clearcoat is, the more accurate the preparation, basecoat application and clearcoat use has to be.



2. Prepare and clean as usual.

Prepare for the entire matt clearcoat application, as blending in of the matt clearcoat with Smart Blend Plus is not possible.

3. Basecoat application and flash off.

Apply the basecoat just as you would a two-coat paint. Allow for sufficient flash off time afterwards.

4. Apply matt clearcoat.

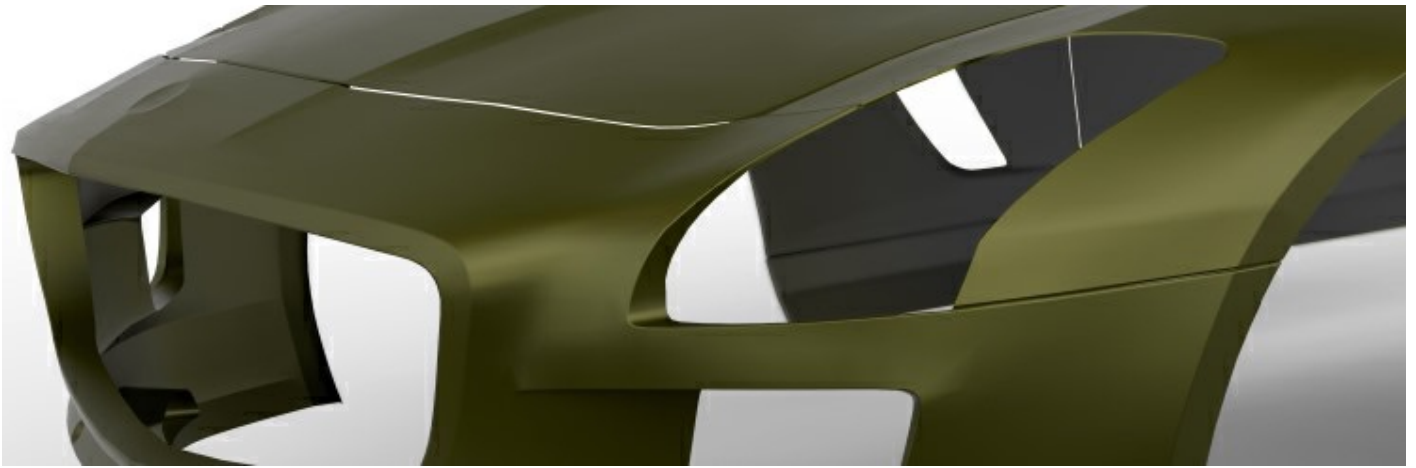
Apply the first spray pass and let it flash off for five to ten minutes at 20°C. Then apply a second spray pass. Let the vehicle part flash-off a final time before force drying it for 10 to 15 minutes.

- Tip for the 80:20 mix: The risk of patchiness can be reduced with a larger nozzle such as SATA HVLP 1.5mm with 2.0 bar inlet pressure.
- Tip to reduce bonding: Increase the spray distance from the object and make the bands correspondingly narrower. For large horizontal surfaces such as the bonnet, apply the first and second spray pass at a displaced 90° angle if at all possible. The first and second spray pass should produce a classic criss-cross pattern.

5. Drying in the spray booth

Allow the painted vehicle part to dry for 45 to 50 minutes at 60°C to 65°C object temperature.

Care tips for matt paints.



There are many, at times conflicting, recommendations concerning matt paint care. These listed here are the Standox findings; we cannot address questions relating to third-party products.

It is, in principle, possible to wash the car in a car wash. However, care programmes such as "gloss protection" should not be selected. Paint-protecting car washes are recommended as brush washes can, in the longer term, have a polishing, and therefore gloss-heightening, effect.

The best and most protective cleaning method is to wash the vehicle by hand with neutral soap, plenty of water and a soft sponge. Just as for traditional gloss finishes, bird droppings, dead insects and tree sap should be removed immediately. If that is not possible, soak the area concerned with water in order to remove the dirt without mechanical help if at all possible.

Micro-fibre cloths are suitable for this. Tar stains can be removed by car owners with a silicone remover in conjunction with the standard commercial cleaning agents. Avoid rubbing the same place vigorously with strong pressure.

Car manufacturers don't recommend application of stickers, films or magnetic signs to OEM matt paints, and Standox recommends the same for refinish paints.

http://www.axaltacoatingsystems.com/content/standox_corporate/en_GB/marketing-services/standopedia/matt-finishes.print.html