



## PROBLEM PREVENTION

*Prevent possible risks by taking the appropriate actions*

A decorative graphic on the left side of the slide, featuring a vertical red bar, a horizontal blue bar, and a vertical green bar, all overlapping at a central point.

**Autocoat BT**

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AkzoNobel



## Problems

Despite of all precautions listed, staff trained, and procedures fixed, unfortunately it is not possible to stop all problems from accuring. At the end, preppers, sprayers or any other employees are robots. They may have to work under extreme pressure, they may have an off day or take any other reason, but problems will occur, sooner or later, more frequently or less frequently.

Some problems will show directly, some only will show after the car has left the bodyshop. Whatever is the case, if problems do show, it is important to be able to identify them exactly, to know their cause and what should be done about them.



To this end the most commonly found errors in car refinishing have been listed on the following pages. Each error has a number, referring to the numbers used on the errors listed.

The last page provides you with an Error matrix, which gives you an overview of all problems discussed related to the relevant phases of the repair process.

We do certainly hope that the information in this book helps you to prevent the problems listed as much as possible, but if they do occur, to overcome them rapidly and correctly.

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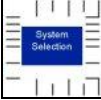


## 1. Poor Adhesion



### Description

Over either small or large areas a layer of paint detaches itself from the substrate. This can sometimes affect several layers of the paint system.

Poor adhesion may show immediately after application and drying or will be visible after some weeks or months.

Process	Cause	Prevention
	Polyester body filler applied over Etch Primer.	Apply Polyester body filler <u>only</u> over bare metal or over 2K Epoxy Primer.
	No recommended primer applied.	Apply recommended primer (for aluminum, plastic, galvanized steel) when needed.
	Wrong selection of the body filler, incompatible for the substrate.	Select the correct body filler related to the substrate.
	Using wrong, not qualified degreaser, contamination not properly removed.	Use recommended degreaser only (compatible product for substrate and/or contamination).
	Using dirty cloths, contamination wiped on the surface.	Use two clean cloths, one to dissolve the contamination, one to remove.
	Incorrect degreasing technique.	Use two clean clothes, and degrease small parts at a time. Wipe off before the degreaser evaporates.
	No degreasing at all.	Wash with (preferably warm) water and soap and then degrease with recommended degreaser.
	Insufficient or incorrect sanding grit and materials, too fine sanding grit selection enhances the risk of adhesion problems.	Sand the repair and feather edge with recommended sanding grit and with standardized sanding paper.



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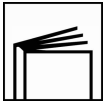


Using incompatible polyester for the substrate (system selection).

Incorrect mixing. Not 100% mixing of the polyester with its hardener.

Use recommended products suitable for the substrate (system selection).

Mix according to recommendation. Do not stir when mixing, to avoid air inclusion in the mixture.



Wrong Hardener selected.

Too fast Reducer selected (Poor flow, too much over-spray, condensation formation in humid conditions).

Wrong application technique:

Too coarse application causes too much over-spray.

Too short flash off times between application layers.

Use recommended dedicated products only.

Select the Reducer related to ambient temperature, repair size and air flow.

Follow recommended application technique;

Apply normal coats, with the right pressure. Remove over-spray between the layers with a tack rag

Stick to the recommended flash off times between application layers.

## Remedy

Remove loose paint layers. If necessary remove applied system in total and start preparation and application according recommendation.





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## 2. Bleeding



### Description

The freshly applied topcoat shows local discoloration. Pigment substances shows through the fresh finish. Although bleeding is predominantly an application defect, it can also occur on a time scale of weeks to months after application. We also observe this phenomenon when we add too much hardener to polyester products. Clearly, the visual severity of bleeding is greatest, when lighter colors are applied.

Process	Cause	Prevention
	Tar spots not removed. Non re-spray able body -coating not removed thoroughly.	Remove all kind of contamination thoroughly. Remove non re-spray able body -coating thoroughly.
	Too much peroxide hardener added to polyester body filler. Hardener and polyester product not thoroughly mixed.	Use the correct mixing ratio, if necessary use a weighing scale or mix with dispenser. Mix the two products in the correct way into a homogeneous mass. Avoid colored lines in the mixture when applying.

### Remedy

Remove the paint system back to and including the bleeding layer and build up the system once more.  
Alternative solution: sand (visual) repair spot with P500 dry, apply a fine silver metallic till opacity is reached and Re-spray topcoat system.

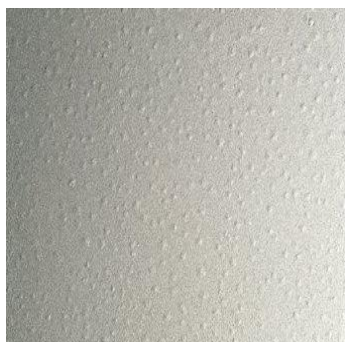
When the amount of peroxide is really overdone, even the Primer Surfacer EP will not block the peroxide in migrating to the surface.





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### 3. Blistering







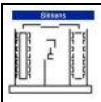
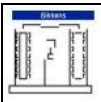
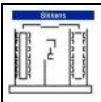
#### Description



The surface displays small pimples, either spread out or in groups. The blisters occur under the topcoat between one of the underlying layers. If you open a few pimples carefully, you can see for yourself the layer in which the blister originates. Blistering is caused by moisture or contamination under the paint which forces the car's paint system up. This normally occurs after a longer time period.

Process	Cause	Prevention
	Application of a basecoat (solvent, or waterborne) over an Etch Primer	Always apply a basecoat on top of a suitable substrate (primer / filler)
	Application of Epoxy Primer over an Etch Primer	Never apply Epoxy Primer on top of an Etch Primer. Etch Primer on top of Epoxy Primer (dried and sanded) is possible.
	Application of Polyester Bodyfiller over Etch Primer	Apply Polyester Bodyfiller only on bare metal and/or sanded Epoxy Primer.
	Contamination was left on the substrate before application	Always degrease properly before application
	Contamination caused by the hands of the applicator. One of the most underestimated risks during the repair process is finger or hand prints on the surface of the car. Because of perspiration, hands are covered with salt that will stick on surface	Do not touch ready to spray panels with bare hands. This kind of contamination can only be removed by rinsing with water and soap, or by using Waterborne Degreaser.
	Damp air condensed on the car.	In cold, damp weather allow the panels to reach ambient temperature again before application.



	Wet sanding of the Polyester Bodyfiller. Absorption of water / moisture into the polyester product.	Always dry-sand Polyester Bodyfiller
	Chalk and/or salt deposits from "contaminated" sanding water remained on the substrate, absorbing moisture, which will be trapped in the new paint film	Rinse substrate thoroughly with clean water after wet-sanding and thereafter dry the object completely
	Contamination inside the Polyester Bodyfiller	Always close can after use in order to avoid contamination which can result in blisters
	Wrong hardener and/or thinner selected, no or insufficient chemical reaction.	Mix products only with recommended hardeners and thinners
	Humidity reacted with the hardener, product is broken, no chemical reaction possible	Always close lid of hardener can after use, as on all other products.
	Incorrect mixing ratio, no or no optimal cross-linking of the components.	Mix products according to the recommended mixing ratio.
	Storage situation of products is too cold or humidity too high. Products attract moisture.	Try to keep the storage temperature at $\pm 20^{\circ}$ C. without too many temperature fluctuations.
	Condensation in the compressor air tank and/or air cooler is not tapped regularly.	Remove condensation water from tank and air cooler system at least on a weekly basis.
	Poor maintenance. Air filter system saturated with moisture	Check more frequently when working in conditions with a higher humidity level Maintain air filter systems regularly, check minimal twice a year

## Remedy

Remove the blistered layers of the paint system down to a sound layer / substrate. In most cases this means that you have to sand it back to bare metal and start applying a complete new paint system.



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## 4. Blushing / Blooming

### Description



The freshly applied paint appears milky (blushing / blooming). This can occur both with products that dry physically and two-pack products.

### Process

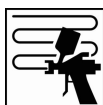
### Cause

### Prevention



The use of a very fast thinner means the surface cools down very quickly, which causes moisture to condense instantaneously on the surface of the wet paint film.

Select a reducer related to temperature, job size and air flow.



Excessive spraying pressure causes the object to cool. Condensation subsequently forms.

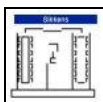
Reduce spraying pressure if necessary

Damp or cold working environment.

Avoid spraying in a cold or damp area

Air circulates too rapidly around the sprayed object.

Check the spray-booth regularly for the correct air speeds.



Too cold storage temperatures. Temperature differences attracts humidity during application

Let the products to use acclimatize to ambient temperature.

The painted object has not been allowed to dry long enough before being put into service and condensation forces its way into the paint film.

Adhere to the recommended drying time in relation to the temperature of the object.

### Remedy

In less serious cases, place car back inside Spraybooth and dry again for 15 / 30 minutes at 60° C. and/or polish the repair. In very serious cases, remove the topcoat and re-apply Topcoat system.



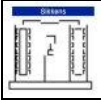
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## 5. Bodying



### Description

If paint bodies, gelatin or thickens, it is often the result of solvent evaporation. One-pack products are particularly susceptible to this.

Process	Cause	Prevention
	Stored at too high temperature	Ideal storage temperature is around 20° C.
	Lid on paint can not closed properly	Close cans directly after use.
	Mixing toners on mixing machine are being over-stirred	With the exception of waterborne products, stir twice a day for 15 minutes and 1 minutes each time you are about to use any mixing colors. Disconnect any sensitive colors from the mixing machine.
	Stirring lids are not closed properly	Clean stirring lids before putting on a new can. Check if it seals properly.

## Remedy

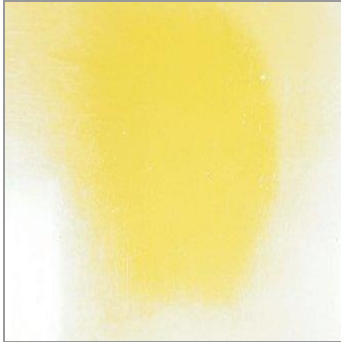
Bodied paint, primers and fillers are no longer suitable for usage and must be replaced with new ones.



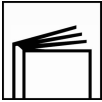
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## 6. Chalking

### Description



During exposure to UV radiation of sunlight, resins of the paint film get chalked. A powdery layer appears on the paint film resulting in a (complete) discoloration.

Process	Cause	Prevention
	Incorrect quantity of hardener or thinner has been added.	Add the correct quantity of hardener or thinner using a measuring stick.
	Wrong type of hardener, resulting in no or an insufficient cross-linking.	Mix products only with recommended hardeners as mentioned in the Technical Data Sheets
	The car has been treated with an unsuitable shampoo, cleaner or too coarse grade of polish	Advise the car owner to use suitable car cleaners.

### Remedy

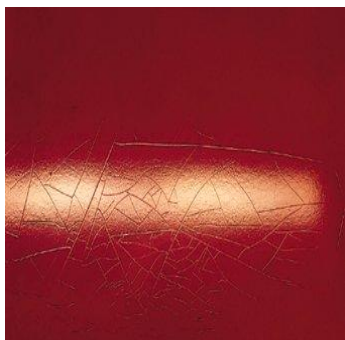
Slight chalking can be removed by polishing. The color can be protected with wax but this is only a temporary solution. If the chalking process repeats fairly rapidly, sand the topcoat and re-spray.



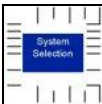
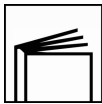


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## 7. Hairline Cracks

### Description



After some time, a wide spread pattern of very fine hairline cracks appear in the paint surface. These will eventually develop into cracks that run straight through the paint layers.

Process	Cause	Prevention
	Topcoat sprayed over a surface that has already cracked	Inspect the substrate carefully during degreasing.
	Too little or too much hardener added to two-pack products. Too much thinner added to one-pack products	Use the correct mixing ratio by using the right mixing stick. Use the correct mixing ratio by using the right mixing stick.
	Priming products are not sufficient stirred.	Stir all paint products thoroughly before using them.
	Topcoat applied over too thick base layer. Topcoat is sprayed too thickly	Avoid over-application and keep within maximum layer thickness. Spray the recommended number of coats and use the correct spraying technique to avoid excessive application.

### Remedy

Remove the cracked paint film completely to sound layer and apply the system again.



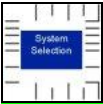

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## 8. Chipping

### Description



A small piece of the finish seems to have broken away from the substrate.  
Sometimes the underlying filler coat has broken as well.  
This problem is usually caused by stone chips.

Process	Cause	Prevention
	One of the paint layers has poor adhesion to the substrate or the top layer is too hard for the underlying paint layers.	Use the correct paint system for the substrate in question.
	Polyester Bodyfiller applied over Etch Primer  No recommended primer applied	Apply Polyester Bodyfiller only over bare metal or Epoxy Primer.  Apply the recommended primer / filler (aluminum, plastic, galvanized steel) when needed.
	Using wrong, not qualified degreasers, contamination will not be properly removed.	Use recommended degreasers only.
	Incorrect degreasing technique, contamination wiped over surface  No degreasing at all	Use clean clothes and degrease small parts at the time. One to dissolve the contamination and one to remove. Wipe off before the degreaser is evaporated.  Wash with, preferably warm water and soap. After degrease surface with the recommended degreaser.

	Insufficient or incorrect sanding grit and materials, too fine grit enhances the risk of adhesion problems.	Sand the repair and feather edge with the recommended sanding grit and with standardized sanding paper.
	Using incompatible polyester materials for the substrate.	Use the recommended polyester products suitable for the substrate.
	Too fast thinner selected, too much overspray and/or condensation formation in humid conditions	Select the thinner related to ambient temperature, size of repair and airflow.
	Excessive application of paint system	Avoid over-application. Apply the recommended layer thickness.
	Wrong application technique, too much overspray.	Follow the recommended application technique. Apply normal layers and with the right pressure. Remove overspray between layers with a tack rag
	Too short flash-off times between coats	Respect flash-off times between coats and drying times as recommended in the Technical Data Sheets.

## Remedy

Touch up small areas before corrosion has a chance to damage the substrate. Touching with a small brush and paint should be carried out as soon as possible after the damage occurs to avoid rust and minimize the risk of further paint coming loose. More extensive damage will require preparation and re-painting.





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## 9. Cloudiness

### Description



Cloudiness appears in metallic / pearl basecoats only. Disorientation of aluminum / pearl pigments in the basecoat are causing a visible disturbance in color appearance (lighter / darker spots), known as cloudiness or mottling effect.

Process	Cause	Prevention
	Too fast thinner selected so too fast evaporation of the thinner	Select the correct thinner related to temperature, size of repair and airflow.
	Incompatible thinner not qualified for the product selected.	Only select the recommended thinners for the products according to Technical Data Sheet.
	Wrong spray-gun setup and incorrect air-pressure	Use recommended fluid tip and check air-pressure.
	Too heavy application of basecoat.	Apply according the recommended spraying technique.
	Flash-off time too short.	Allow recommended flash-off times and if necessary extend them.
	Poor overlaps	Use the correct spraying technique
	Mist-coat after too short flash-off time or at excessive pressure	Make use of the correct technique for the mist-coat.

### Remedy

Sand the surface with P500 dry or P1000 wet and re-spray according to recommendation.

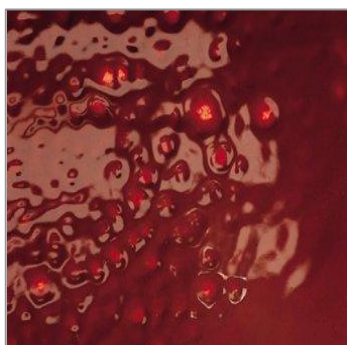


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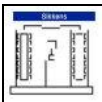


## 10. Craters

### Description



The surface is dotted with small local holes. Silicone craters form. The substrate is sometimes visible in the bottom of the crater.

Process	Cause	Prevention
	The vehicle has not been degreased sufficiently	Degrease the object thoroughly before application. Use the proper degreaser.
	Dirty clothes have been used for degreasing.	Only use clean cloths for degreasing using a wipe on, wipe off technique.
	Using unqualified degreaser	Use recommended degreasers only.
	Compressed air contaminated with oil and water.	Check oil / water separator and drain if necessary.
	Poor housekeeping, dirty working area.	Keep working area clean and free from contamination.
	Spraybooth contaminated with silicones	Don't use products containing silicone in the Spraybooth or in the workshop
	Use of silicon containing car maintenance and repair products in the mechanical department	Don't use products containing silicone in the workshop
	Poor maintenance, soot of oil heater.	Check heater and heating system regularly.

### Remedy

Degrease thoroughly and sand paint layer smooth. Apply a thin coat first and then the subsequent coats. Allow adequate flash-off time between coats. If necessary apply a coat of filler before topcoat.



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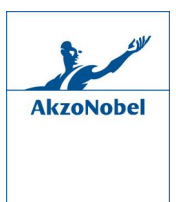
# 11. Contour Mapping

## Description



Either the edge of an underlying coat of the system can be seen in the topcoat, or sanding marks around the original repair are visible.

Process	Cause	Prevention
	<p>The bodyfiller has been applied to an unsuitable substrate, causing tension differences.</p> <p>Application of products over softer finishes such as Thermo Plastic Acrylics.</p>	<p>Analyze the substrate before applying Polyester Bodyfiller.</p> <p>Analyze substrate by using the thinner test; apply the recommended system over these soft substrates.</p>
	<p>The substrate was not degreased, or not degreased properly, before sanding. This means the product applied has insufficient adhesion.</p>	<p>Always thoroughly degrease before sanding.</p>
	<p>The substrate to which the bodyfiller is applied has been sanded with a too fine sanding grade. While sanding, the edges crumble away, leaving an irregular feathered edge to the area around the repair due to insufficient adhesion.</p> <p>The area around the repair has not been properly feathered down to the original paint layer.</p> <p>Substrate too coarsely prepared. Coarse sanding scratches are seen.</p>	<p>Use the recommended coarseness both for sanding and feathering the repair.</p> <p>Substantially feather edge the area around the repair down to the original paint layer.</p> <p>Use the correct sanding steps.</p>



A small, damaged patch in the paint system has not been sufficiently feathered.

Sand small damaged patches thoroughly down to the original paint layer.

The filled area has not been sanded smooth enough. It stands proud of the surrounding areas.

Use a sanding block for sanding smooth and feel the surface of the filled area regularly.

Incorrect sanding technique / poor equipment.

Use quality sanding tools and use them correctly.

The bodyfiller has been partially applied on top of old paint. During sanding, an irregular edge is formed around the filled area.

Sand the repair thoroughly. Apply polyester bodyfiller only on bare metal. Avoid tension differences.



The bodyfiller has not been applied smoothly and without a feathered application around the edges.

Sand according the correct sanding steps and create a smooth feather edge from bodyfiller to bare metal.

Application of 1K bodyfiller for bigger dents. Shrinkage will lead to contour mapping.

Use 2K bodyfiller to fill the dent and 1K bodyfiller only for small pinholes and/or scratches.

## Remedy

Sand and feather the repair smooth and complete the system once more.



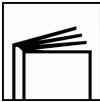

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## 12. Color Difference

### Description



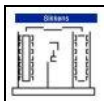
The color shade of the repaired area does not match the car's original color. Sometimes we can see flotation in the fresh paint finish.

Process	Cause	Prevention
	Incorrect hardener or thinner used.	Select only recommended hardeners and thinners for the product according to Technical Data Sheet.
	Incorrect mixing ratio.	Mix the components as mentioned in the Technical Data Sheet. Changing the mixing ratio influences the color.
	Wrong spraying viscosity.	Use the recommended mixing ratio. If necessary check by using a viscosity cup.
	Wrong variant or color chosen when selecting the color code.	Select the right color or color variant.
	Color match is not checked by using spray-out panel.	Check color by using a spray-out panel.
	Mixing formula was not closely followed.	Correct mixing of the color formula. Recalculate the formula if you have added too much of a certain color-toner, or remix.
	Poor stirring of the mixed toners	Stir and mix toners properly.
	Tinting of the color is not sufficient.	Tint as close as possible and check by spray-out.
	Wrong application, inadequate covering because of wrong application technique.	Apply according to recommended application method.



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Excessive spraying of the mist coat.	Apply a mist coat according to Technical Data Sheet.
Incorrect nozzle size, too big / small	Use correct gun setup as recommended in Technical Data Sheet.
Mixing colors on the mixing machine have not been stirred.	With the exception of waterborne paint, stir mixing toners on mixing machine at least twice a day.
Poor maintenance of mixing / weighing equipment.	Keep scale clean and check yearly by qualified calibration / service company.
Poor color documentation	Keep color documentation clean and updated.



## Remedy

Sand the topcoat, mix color again, check the color on a spray-out panel, tint color if necessary and re-apply the color.








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### 13. Poor Through-Hardening



#### Description

After a considerable length of time, the paint film or polyester bodyfiller has still not hardened. You can easily make a mark by pressing the surface with your fingernail.

Process	Cause	Prevention
	The substrate was contaminated with grease.	Degrease the substrate and surrounding area thoroughly before sanding and spraying.
	Not the correct mixing ratio of polyester bodyfiller with peroxide hardener.	Mix with the correct mixing ratio.
	Hardener was left open for a long time and reacted with moisture. Hardener exceeds shelf life.	Keep hardener can or tube closed when not used. Notice shelf life of the hardener and keep track on expire date.
	Wrong hardener selection.	Select recommended (sometimes dedicated) hardener.
	Incorrect mixing ratio, too much or too little hardener.	Use the correct mixing ratio, measured with the correct measuring stick. Whenever possible use the dispenser for mixing polyester bodyfiller.
	Lid of hardener can was not closed.	Always close the lids of hardeners when not in use.
	Hardener over expire date.	Pay attention to expire date of the product.



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Application of too heavy layers.

Apply normal layer thickness according to recommended application technique.

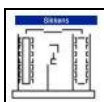


Too low drying time.

Adhere to the recommended temperature of 20° C. for spraying. If necessary, allow the car to acclimatize in the booth.

Too short drying time.

Adhere to the recommended drying time according to the Technical Data Sheet.



Drying temperature too low, temperature does not reach the level which is shown on the temperature meter.

Maintain the Spraybooth regularly and check meter indication.

## Remedy

Dry the object for a longer period at the recommended temperature. When insufficient through-hardening is the case, remove total system and apply again. When wrong products have been selected, remove the paint by washing off with thinner or by sanding and re-spray again.





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## 14. Overspray

### Description



Overspray falls on a freshly sprayed surface and is no longer absorbed. The surface acquires a sandy appearance because of the dry paint particles sticking to it.

Process	Cause	Prevention
	Wrong hardener / thinner selection. Too fast hardener, paint film is closing too fast. Too fast thinner, paint film is closing too fast; a too fast evaporation, resulting in too much atomization (spray-mist).	Select recommended hardener / thinner related to temperature, job size and air-flow.
	Spraying viscosity too high due to insufficient thinning.	Use the appropriate measuring stick to get the correct mixing ratio.
	The spraying pressure is too high.	Reduce the spraying pressure, as mentioned in Technical Data Sheet, to the recommended level.
	Spraying motion is too fast or spraying distance too far off.	Adjust the spraying technique and spraying distance as recommended by Technical Data Sheet.
	Wrong spray-gun and/or setup.	Use the correct spray-gun and setup in relation to the product to be sprayed.
	Spray-gun is dirty and/or poor maintained.	Use a clean and proper spray-gun.

### Remedy

In most cases, polishing is sufficient. In exceptional cases, a light sanding and re-spray is needed.



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## 15. Dust Inclusion

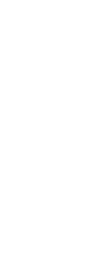
### Description



Dust particles have fallen onto the wet paint film and became trapped as the paint film dried.

Process	Cause	Prevention
	Clean before application, scuttles, wheel arches or gaps. Dirt and dust can blow up out of these areas.	Clean thoroughly all openings around the repair.
	Sanding dust remains on the surface.	Use dust extraction during sanding and clean carefully after sanding.
	Fibers detach from the torn edges of masking paper and/or masking tape.	Use good quality masking paper and tape. Fold torn edges to inside. Use the paper with the smooth side outermost.
	Tack rag was not used to remove dust particles before application and/or overspray between basecoat layers.	Always use a tack rag for removing dust particles and/or overspray.
	Paint contaminated.	Always make use of a paint strainer to filter out contamination
	Clothing creates dust.	Wear clean, fiber free, anti-static spraying overalls (nylon).
	Too much movement (walking) around the car causes dust to be thrown up.	Don't make unnecessary movements in the booth.
	Build up of statically / electrical charge.	Make use of Anti Static Degreaser and make use of earth clamp to neutralize.

# Autocoat BT



Booth pressure is too low.

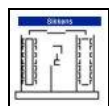
Check booth pressure regularly.

Filters are clogged.

Replace filters regularly.

Booth floor is not dust free.

Keep the booth floor clean. Don't keep any unnecessary objects on it or in the booth itself.



Booth walls are dirty.

Clean booth regularly.

Ceiling filters unsuitable.

Use the appropriate filters.

Contaminated airline.

Tack about 2 meters of the airline behind the spray-gun with an old tack rag and keep this section away from the floor when spraying. Hang up airline after spraying.

Poor maintenance of the compressed air system.

Check system regularly.

## Remedy

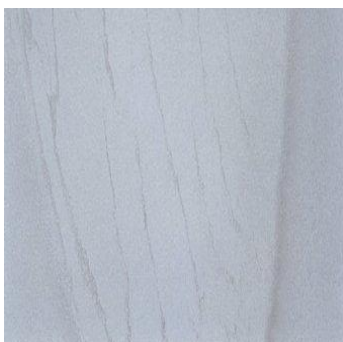
Dirt inclusions can be removed with a needle during application. Minor dust particles in the dried paint film can be removed by polishing. If the dirt is trapped too deep in the paint, sand the surface and re-spray.





# Autocoat BT

## 16. Flotation

### Description



Most colors consist of combination of different pigments. Each pigment has its own specific gravity. The lightest pigments will float to the top of the wet paint film. This process can affect the final color.

Process	Cause	Prevention
	Too slow thinner type used.	Use the recommended Sikkens thinner.
	Too heavy application. The subsequent coats have been applied after too short flash-off time.	Avoid over application of each coat. Allow sufficient flash-off times.
	Spraying distance is too short. Fluid tip too big.	Pay attention to the spraying distance, particularly with curves and seams. Use the correct fluid tip according to Technical Data Sheet.
	Ambient temperature or object temperature is too low.	Let object acclimatize to the ambient temperature before application.

### Remedy

Let the paint flash-off for a longer period and apply a normal coat and finish. Heavy floatation (almost up to runs), let the paint dry, sand the topcoat and re-spray it.





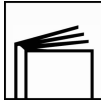
# Autocoat BT

## 17. Low Gloss

### Description



The freshly applied paint has a lower gloss level than wanted.

Process	Cause	Prevention
	Wax or similar contamination has been absorbed by the wet paint film.	Washing and degreasing the repair area and its surrounding thoroughly before sanding and painting.
	Insufficient through-hardening of the filler before sanding. Sanded with too coarse grade of abrasive.	Pay attention to the drying time in relation to the ambient temperature and film build. Use only recommended sanding grades as specified in Technical Data Sheet.
	Too fast thinner used. Wrong hardener and/or thinner used. Wrong quantity of hardener and/or thinner added. Components not properly mixed.	Select the correct thinner related to the repair size, temperature and air flow. Use the recommended Sikkens hardener and thinner. Use the measuring stick to achieve the correct mixing ratio. First add hardener, stir it and then add the thinner and stir again.
	Air drying one-pack topcoat polished too soon.	Refer to Technical Data Sheet for hard-dry to polish times.



# Autocoat BT

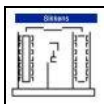


Excessive application.  
Flash-off times ignored

When using a wet-on-Wet system, the coats have been applied after too short flash-off times or applied too heavily.

Apply normal as specified in Technical Data Sheet.  
Always allow the recommended flash-off time.

Allow the recommended flash-off times and avoid spraying excessive film thicknesses.



Baking temperature too long or too high.

Insufficient / poor supply of fresh air during air recirculation.

Adhere to recommended drying temperatures and times. Check the functioning of the automatic timer and temperature regulator regularly.

Check filters and booth equipment regularly.

## Remedy

Raise the gloss by polishing. If this has no effect, sand lightly and re-spray.



# Autocoat BT



## 18. Poor Covering

### Description

The substrate is visible through the topcoat. This usually occurs on surfaces that are difficult to spray or on angles and edges.



### Process

### Cause

### Prevention



The paint has not been stirred sufficiently beforehand.

Stir the mixing toners well before use.

Paint coat not applied in sufficient layer thickness.

Apply the recommended number of layers or spray until covered.

Unevenly sprayed.

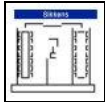
Use the correct application technique according to Technical Data Sheet.

Flash-off times ignored.

Allow sufficient flash-off time.

The fresh paint coat has been partially removed by polishing.

Allow the paint finish to cool down before polishing. When polishing do not hold the polishing machine on the same spot for too long. Use a suitable polish.



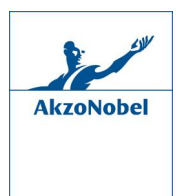
Lighting inside the Spraybooth is insufficient and/or not correct.

Use recommended light tubes with color strength and angle for spraying in the booth.

## Remedy

Abrade the paint finish and re-spray.

# Autocoat BT

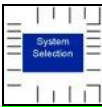




## 19. Lifting

### Description



During spraying, the substrate is partially dissolved.

Process	Cause	Prevention
	The paint being applied is incompatible with the substrate.	Always carry out a substrate diagnosis around the area to be repaired.
	The degreaser is too aggressive in relation to the substrate applied on (primer, filler and/or topcoat).	Check substrates and use the recommended products for that substrate.
	A layer which was previously sprayed has poor adhesion with the substrate.  The substrate is not completely dry or hardened through yet.  The paint has been sprayed too heavily.	Choose the right primer or filler for the substrate in question. Use the right mixing ratio for this product and employ the correct spraying technique.  Stick to the correct drying times and temperatures.
	Unusually long flash-off time employed. The flash-off layer is dissolved by the solvents in the next coat which is applied.	Use the correct spraying technique and avoid heavy application  Spray the subsequent coats immediately after the recommended flash-off time.

### Remedy

To a certain degree the lifting layers can be sanded after drying, down to a sound layer. Afterwards, the system can be refinished again. With sensitive substrates, always spray carefully – in thin coats and with enough flash-off time between each coat. Any layers which are severely lifted must be removed completely; afterwards the system can be refinished.

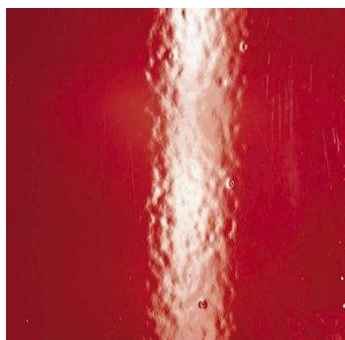




# Autocoat BT

## 20. Orange Peel

### Description

The freshly applied paint exhibits poor flow and resembles orange peel.



Process	Cause	Prevention
	Paint spraying viscosity too high	Mix in the correct ratio using a measuring stick. Check viscosity.
	Wrong hardener too fast. Wrong thinner, too fast.	Select the recommended hardener for the job. Select the correct thinner in relation to job size, temperature and air flow.
	Spraying pressure too high or too low.	Apply products according to recommended pressures as mentioned in Technical Data Sheets.
	Fluid tip too big.	Use correct spray-gun setup for the products as mentioned in Technical Data Sheets.
	Ambient and/or object temperature too high or too low.	Ideal ambient temperature for spraying is around 20° C.
	Materials to use are too cold	Ideal storage temperature around 20° C.
	Too much additive added	Mix in the correct quantity using the measuring top of the container.

### Remedy

Slight orange peel effect can be removed by polishing. If more serious, the surface must be sanded and re-sprayed.

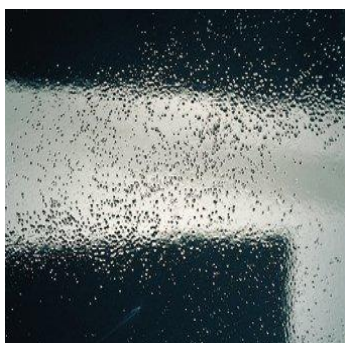


# Autocoat BT



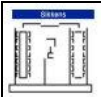


## 21. Pinholes

### Description



Small holes of around 0.5 mm diameter can be observed in the paint surface. If the hole is enlarged a little with a pin, we can see the paint layer in which the hole is originated. Air has become trapped in during application. After sanding open the hollows, causing small holes, the subsequent paint film has flowed into them.

Process	Cause	Prevention
	Wrong mixing technique.	Always use two knives for mixing filler and hardener. Do not stir the bodyfiller to avoid air inclusion.
	Wrong filling technique.	The best angle for the knives is around 60° C. to the surface. Limit the number of filling motions.
	Potlife exceeded.	Do not use bodyfiller when the Potlife has exceeded.
	Use of fluid tip which was too small or too big.	Use correct spray-gun setup for the products as mentioned in Technical Data Sheets.
	Material sprayed was too thick.	Mix in the correct ratio using a measuring stick.
	Potlife exceeded. The material has bodied and is difficult to spray.	Do not exceed the potlife.
	Flash-off time too short. Remaining solvents collect under the surface of the paint film after force drying. After sanding, hollows emerge which are not filled by any subsequent paint coats.	Allow the correct flash-off time in relation to ambient temperature, air movement and thinner selection.
	Too fast air flow inside the Spraybooth and/or too intense forced ventilation.	Maintain the Spraybooth regularly, check air flow.

### Remedy

Sand the paint and/or filler completely to remove the pinholes and re-apply.



# Autocoat BT

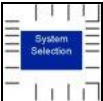


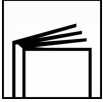



## 22. Rust

### Description



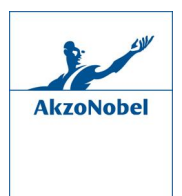
The paint system has been forced up over small areas, in strange patterns or as blisters. If we puncture them we discover rust and damp on the metal.

Process	Cause	Prevention
	Application of topcoat directly over bare metal.	Always apply the recommended system for optimal warranty.
	The substrate has not been degreased well enough so the rust inhibiting primer or the paint system could not adhere well.	Always degrease before application. Use one of the recommended degreasing agents.
	Rust has not been properly removed during sanding (or grit-blasting).	Remove existing rust thoroughly, particularly pitted corrosion.
	Too little hardener added to the etch primer.	Make use of the correct amount of hardener as recommended by the Technical Data Sheet.
	Insufficient layer thickness applied.	Apply wetter coats to achieve the layer thickness as recommended by Technical Data Sheet.

### Remedy

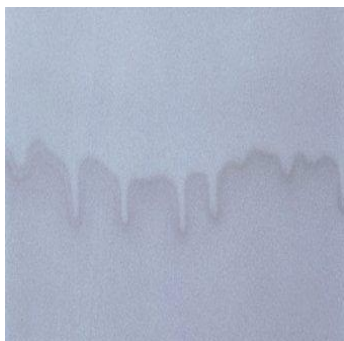
Remove the entire system, remove any rust completely (preferable by grit-blasting), degrease again and build up the system once again.

## Autocoat BT






## 23. Runs

### Description



Through uneven thickness of the coat in some places, runs can be seen, mainly on vertical surfaces. The accumulation of paint in the area is so great that the paint coat starts to run while still wet.

Process	Cause	Prevention
	The substrate has not been properly degreased. The paint runs because it cannot adhere properly to the substrate.	Degrease the vehicle carefully before spraying.
	The thinner chosen is too slow for the conditions. Too much thinner has been added to the product.	Select the correct thinner related to the temperature, job size and air flow. Use a measuring stick or viscosity cup to achieve the correct ratio and/or viscosity.
	The spraying distance is too close or the paint is applied unevenly causing local paint accumulation. Layers have been applied too heavily. Spray-gun setup is too big.	Use the correct spraying technique. Use the correct spraying technique. Use the correct spray-gun setup as recommended by the Technical Data Sheet.
	The spraying environment is too cold and the thinner evaporates too slowly.	Ideal spraying temperature is around 20° C. If necessary, use a faster thinner.
	The vehicle is too cold.	If necessary, allow the vehicle to acclimatize in the spraybooth.
	Paint is too cold to spray.	Storage temperature is around 20° C.

### Remedy

Small runs can be removed by fine sanding and polished. Serious runs must be sanded smooth after hardening and then re-sprayed.



# Autocoat BT



## 24. Sanding Marks

### Description



Fine scratches can be seen in the paint coat, generally the topcoat. The problem can reveal itself either immediately or after a few weeks. We can often recognize the sanding pattern of the sanding machine or hand sanding block.

### Process

### Cause

### Prevention



The sanding grade was too coarse for the product subsequently applied.

The area surrounding the repair has been feathered too coarsely.

The primer or filler coat was not sufficiently through-hardened for sanding.

Grit or coarse dirt particles have caused scratches during sanding.

Too coarse sanding material has caused scratches during hand sanding.

Choose the grade, as recommended for the product to be applied subsequently.

Use a grade 100 points finer (maximum) for feathering, example P180 – P280.

Allow sufficient through-hardening before sanding.

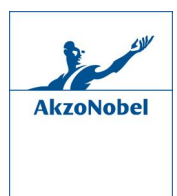
Before sanding remove all dirt carefully by dusting and blowing it off.

Always use one step finer for hand sanding.

### Remedy

After it has through-hardened, sand the topcoat smooth using the correct grade and re-apply the topcoat and substrates if necessary once more.

# Autocoat BT

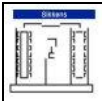


## 25. Settlement

### Description



If stored for a long time, certain pigments can sink to the bottom of the can due to their weight or shape. The paint is then no longer a homogeneous mass.

Process	Cause	Prevention
	The temperature in the storeroom is too low or the differences in temperature are too big.	Ideal storage temperature is around 20° C. and should be reasonably stable.
	Shelf life of the paint has been exceeded.	First in first out rule when supplementing stock.
	The M.M. colors on the mixing machine are not regularly stirred.	Stir M.M. colors for about 15 min. twice a day, in the morning and after lunch. Shake each new can in a paint shaker or stir it thoroughly for about 15 min. after placing on the mixing machine.
	The paint has been stored for too long in thinned condition.	Never thin paint and store it.

## Remedy

If shelf life has not been exceeded and the temperature has not adversely affected the quality of the paint, you can put the paint in a paint-shaker, or stir for at least 15 minutes on the mixing machine.



# Autocoat BT

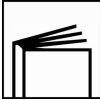

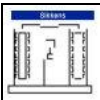


## 26. Solvent Pops

### Description



Small “pops” can be seen on the freshly dried surface.

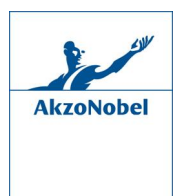
Process	Cause	Prevention
	<p>Poor quality thinner used.</p> <p>Too fast thinner type used.</p>	<p>Use the appropriate thinner.</p> <p>Select the recommended thinners related to temperature, size and flow.</p>
	<p>Wrong spraying pressure or fluid tip.</p> <p>Layers are applied too thick and too soon after each other.</p> <p>Flash-off time ignored.</p> <p>Force dried immediately after spraying.</p>	<p>Use the recommended spray-gun setup recommended by Technical Data Sheet.</p> <p>Use the correct spray technique and allow sufficient flash-off time between coats.</p> <p>Allow the recommended flash-off times.</p> <p>Allow the coat to flash-off before force drying.</p>
	<p>Drying temperatures too high.</p> <p>Too fast air flow inside the spraybooth.</p> <p>Infrared drying equipment has been used too soon or too close to the object.</p>	<p>Check booth temperature, temperature regulator and switch regularly. Reduce drying temperature.</p> <p>Maintain spraybooth and check the air flow regularly.</p> <p>Let the paint layer flash-off properly before drying with infrared equipment. Place the equipment at the recommended distance from the car.</p>

### Remedy

Sand the paint until all traces of solvent pops have been removed, if necessary apply a filler and re-spray with topcoat.

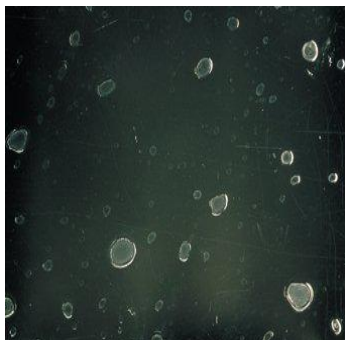


# Autocoat BT





## 27. Water Marks

### Description



The edge of evaporated water droplets can be seen on the paint.

Process	Cause	Prevention
	The incorrect amount of hardener has been used.	Mix in correct mixing ratio according to Technical Data Sheet using a measuring stick.
	Extremely thick paint coat applied, which has not through-hardened sufficiently within the recommended time. Paint coat has not through-hardened properly.	Avoid heavy application. Allow to dry for the recommended drying time and drying temperature.
	The paint coat has been exposed to rain or water droplets whilst it was cooling.	Allow the car to cool down before driving it outside into rain or before washing it.

### Remedy

Polish the surface until the marks have disappeared. If this proves not to be possible or if the problem repeats itself after polishing, sand and re-spray the affected parts.



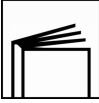

# Autocoat BT

## 28. Wrinkling

### Description

The paint surface acquires a finely waved appearance.



Process	Cause	Prevention
	Incorrect hardener or thinner used.	Use the recommended hardener and/or thinner suitable for the product.
	Paint applied to a substrate that was only partially dry. Flash-off times not adhered to; the subsequent coat has been applied to a coat that was still wet. Paint applied too thickly.	Ensure that substrate has through-hardened when you are degreasing or sanding. Allow the recommended flash-off times. Make sure air circulation is good. Apply the recommended number of coats using the correct spraying technique. Avoid heavy application.

### Remedy

For a slightly wrinkled surface, force dry, sand and re-spray. If the surface shows serious signs of wrinkling, remove the paint and apply once more.



# Autocoat BT




## 29. Peeling

### Description



Poor adhesion of the clearcoat may show immediately after application and drying of the paint, but it may also develop after some weeks or months.

Process	Cause	Prevention
	Wrong application technique, mist coat applied too course. No tacking between the layers.	Apply according to recommendation. Tack between every base coat after flash-off.
	Flash-off time was insufficient not adhered to; solvent or water residue is trapped between the basecoat and the clearcoat.	Allow the recommended flash-off times between layers. Make sure air circulation is good.
	Wrong mixing (too high viscosity), related to increased layer thickness.	Mix according to product Technical Data Sheet and avoid excessive layer thickness.

### Remedy

Remove all areas that are not adhering properly down to a sound layer and re-apply the system. In most cases the entire previously applied system must be removed and a complete system must be applied according to paint manufacturer's recommendation.



# Autocoat BT