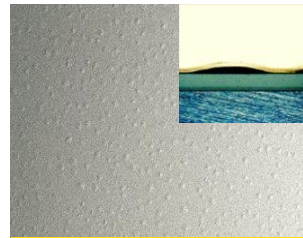




1 Poor adhesion



2 Bleeding



3 Blistering



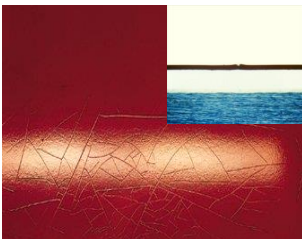
4 Blushing & Blooming



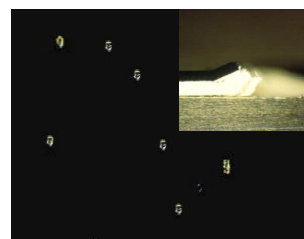
5 Bodying



6 Chalking



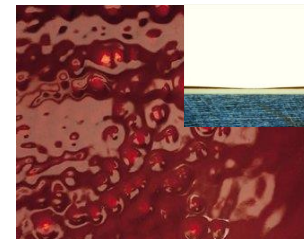
7 Hairline cracks



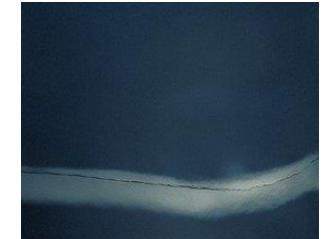
8 Chipping



9 Cloudiness



10 Craters



11 Contour mapping



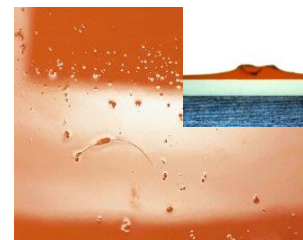
12 Color difference



13 Poor throughhardening



14 Overspray



15 Dust inclusion



16 Floatation



17 Low gloss



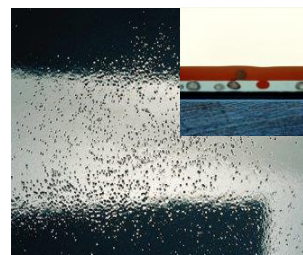
18 Poor covering



19 Lifting



20 Orange peel



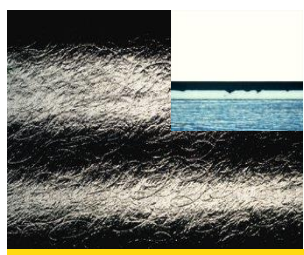
21 Pinholing



22 Rust



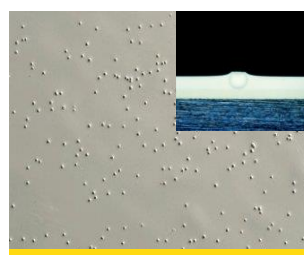
23 Runs



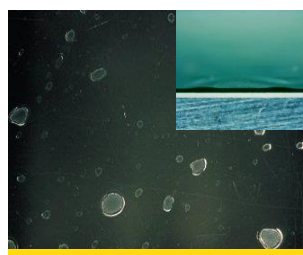
24 Sanding marks



25 Settlement



26 Solvent pops



27 Water marks



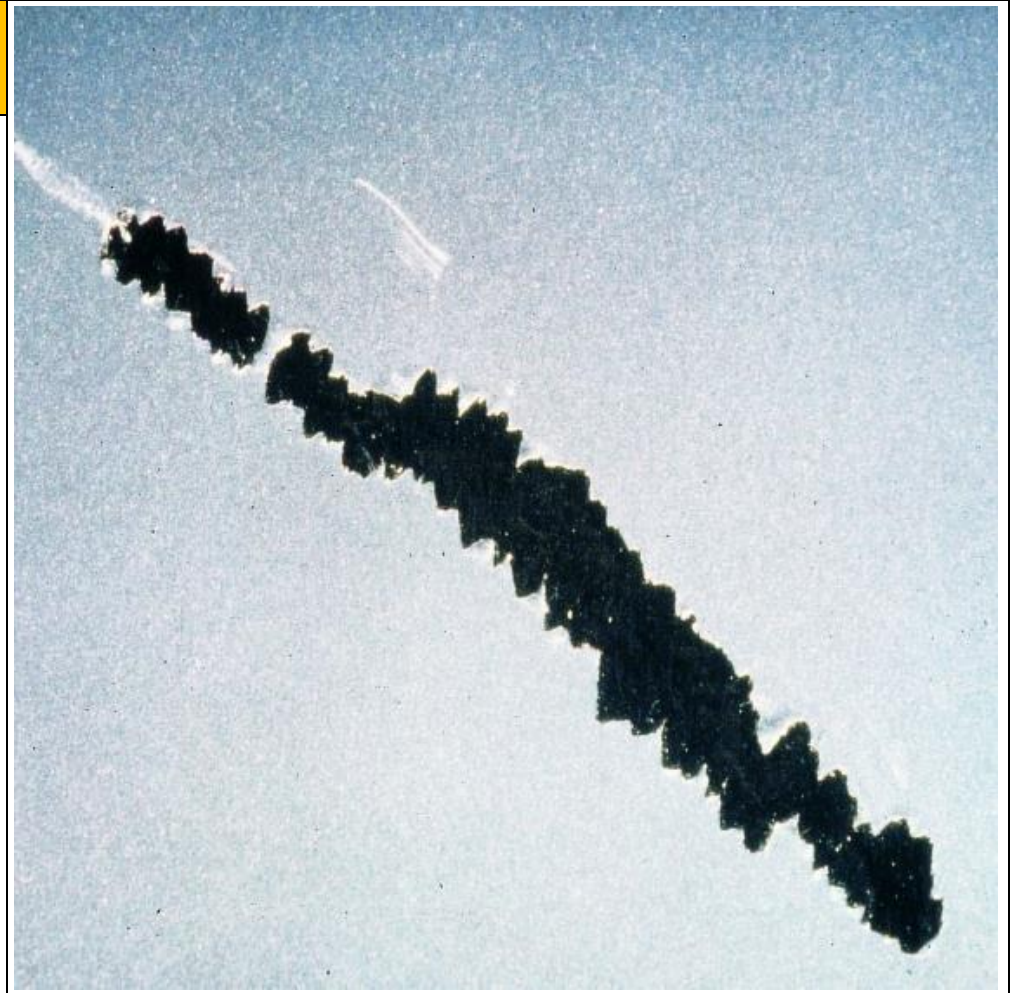
28 Wrinkling



29 Peeling





Description

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




Cause

Prevention

	Polyester body filler applied over Wash Primer.	Apply Polyester body filler <u>only</u> over bare metal or over Primer Surfacer EP.
	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 degreasers, contamination not properly removed.	Use recommended degreasers only (compatible product for substrate).
	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.
	Using incompatible polyester for the substrate(system selection).	Use recommended products suitable for the substrate (system selection).
	Incorrect mixing. Not 100% mixing of the polyester with the peroxide hardener.	Mix according to recommendation. Do not stir when mixing, to avoid air inclusion in the mixture.



	Cause	Prevention
	Wrong Hardener selected.	Use recommended, dedicated products only.
	Wrong application technique: Too coarse application causes too much over-spray. Too short flash off times between application layers.	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.
	Too fast Reducer selected (Poor flow, too much over-spray, condensation formation in humid conditions).	Select the Reducer related too ambient temperature, repair size and air flow.

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.



Description

Fresh 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.

Clearly, the visual severity of bleeding is greatest, when lighter colors are applied.



Cause

Prevention

	Tar spots not removed.	Remove all kind of contamination thoroughly.
	Non re-spray able body -coating not removed thoroughly.	Remove non re-spray able body -coating thoroughly.
	Too much peroxide hardener added to polyester body filler.	Use the correct mixing ratio, if necessary use a weighing scale or mix with dispenser.
	Hardener and polyester product not thoroughly mixed.	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.

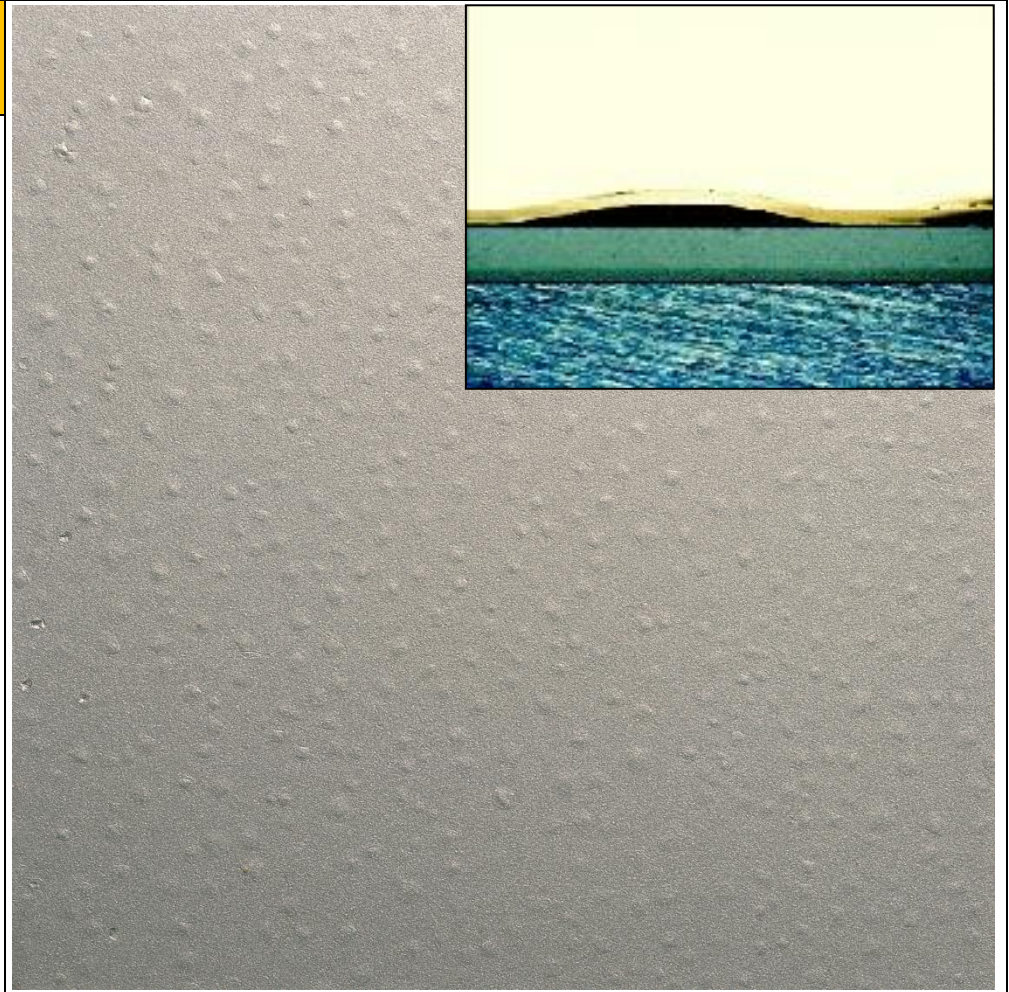


Description

Small pimples will be displayed at the surface.




Blistering is caused by moisture or contamination under the paint which forces the paint system up.

This normally occurs after a longer time period.






Cause

Prevention

	<p>Application of a base coat (Solvent, or waterborne) over Wash Primer CR (etch primer).</p>	<p>Always apply a base coat on top of a suitable substrate (primer / filler).</p>
	<p>Application of Primer Surfacer EP over Wash Primer.</p>	<p>Never apply Epoxy Primer on top of an etching primer. Etching primer on top of Epoxy Primer (dried and sanded) is possible.</p>
	<p>Application of Polyester body fillers over Washprimer.</p>	<p>Apply polyester body fillers only over bare metal or on sanded Primer Surfacer EP.</p>
	<p>Contamination was left on the substrate.</p>	<p>Always degrease properly with every step in the process.</p>
	<p>Contamination caused by hands. 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 the surface.</p>	<p>Do not touch ready to spray panels with bare hand; this kind of contamination can only be removed by cleaning with water and soap, or using water born degreaser.</p>
	<p>Wet sanding of the polyester body filler. Absorption of the water into the polyester product.</p>	<p><u>Never</u> sand polyester body filler with water.</p>
	<p>Chalk and salt deposits from the “contaminated” sanding water remained on the substrate, absorbing moisture, which will be trapped in a new paint film.</p>	<p>Rinse thoroughly with clean water after sanding and dry the object completely.</p>



	Cause	Prevention
	Wet sanding of the polyester body filler. Absorption of the water into the polyester product.	Never wet sand polyester body filler with water.
	Wrong Hardener selected, no or insufficient chemical reaction.	Mix products only with recommended hardeners.
	Humidity reacted with Hardener; product is broken, no more chemical reaction possible.	Always close the lid of the Hardener can, as on all other products.
	Incorrect mixing ratio, no, or no optimal cross-linking of the components.	Always mix the components according to the recommended mixing ratio.
	Storage situation of the products is too cold or humidity conditions are too high. Product attracts moisture.	Try to keep the storage temperature at, $\pm 20^{\circ}\text{C}$. without too many temperature fluctuations.
	Condensation in the air tank and air cooler is not tapped regularly.	Remove the condensation water from the tank and cooling system at least on a weakly basis. Check more frequently when working in conditions with a higher humidity level.
	Poor maintenance. Air filter system saturated with moisture.	Maintain the air filter systems regularly, check twice a year.

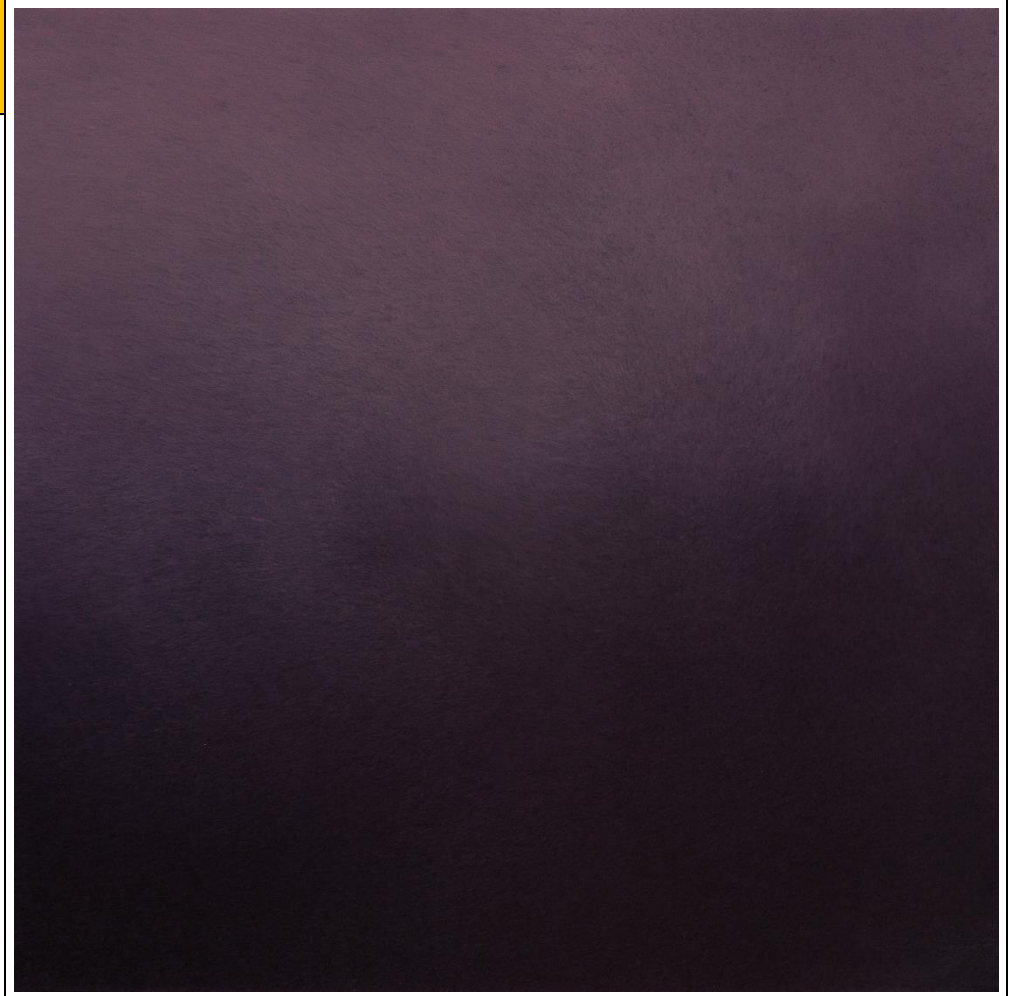
Remedy

Remove the blisters completely to a sound layer. In most cases this means that you have to sand to bare metal and start applying a complete new paint system.




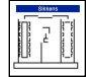
Description

The freshly applied paint appears to be milky.



Cause

Prevention

	<p>The use of a too fast reducer will cool down the surface very quickly. In humid conditions the moisture from the air will be attracted and will condense on the surface of the wet paint film.</p>	<p>Select a Reducer related to temperature, job size and air flow.</p>
	<p>Too cold storage temperature, temperature differences attracts humidity during application.</p>	<p>Let the paint acclimatize to ambient temperature.</p>

Remedy

Place the car back inside the spray-booth, dry again for 15 / 30 minutes at 60°C.
Placing the car in the sunlight can give the same result.

- If defect does not disappear, sand the topcoat and re-apply top coat system.
If defect re-appears, remove topcoat by sanding and re-apply the total paint system.




Description

If paint bodies, gelatin or thickens, it is often the result of solvent evaporation.

1K products are particularly susceptible to this.



Cause
Prevention

	Stored at too high temperatures.	Ideal storage temperature is $\pm 20^{\circ}\text{C}$.
	Lid on the paint can is not closed properly.	Close tins directly after use.
	Mixing toners on the mixing machine are being over stirred.	With the exception of water born product, stir twice a day for 15 minutes.
	The stirring lids are not closed properly.	Clean the stirring lid before putting on a new tin. Check if it seals properly.

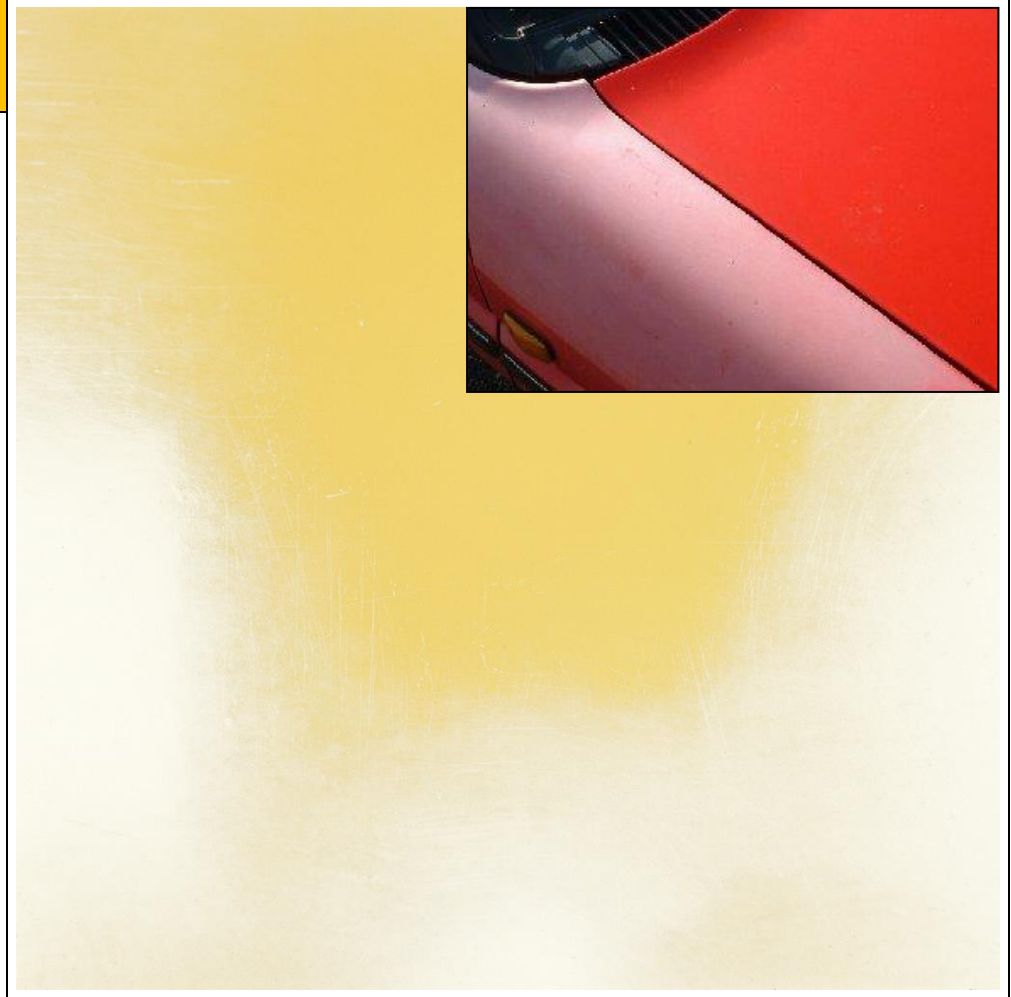
Remedy

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




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 (complete) discoloration.



Cause

Prevention

	Wrong quantity of Hardener, result in insufficient cross linking.	Mix according to the recommended mixing ratio, use the correct quantity of Hardener.
	Wrong type Hardener selected, result in no, or an insufficient cross-linking. The paint will be more sensitive to UV radiation.	Mix only with recommended Hardeners, as mentioned in the Technical Data Sheets.

Remedy

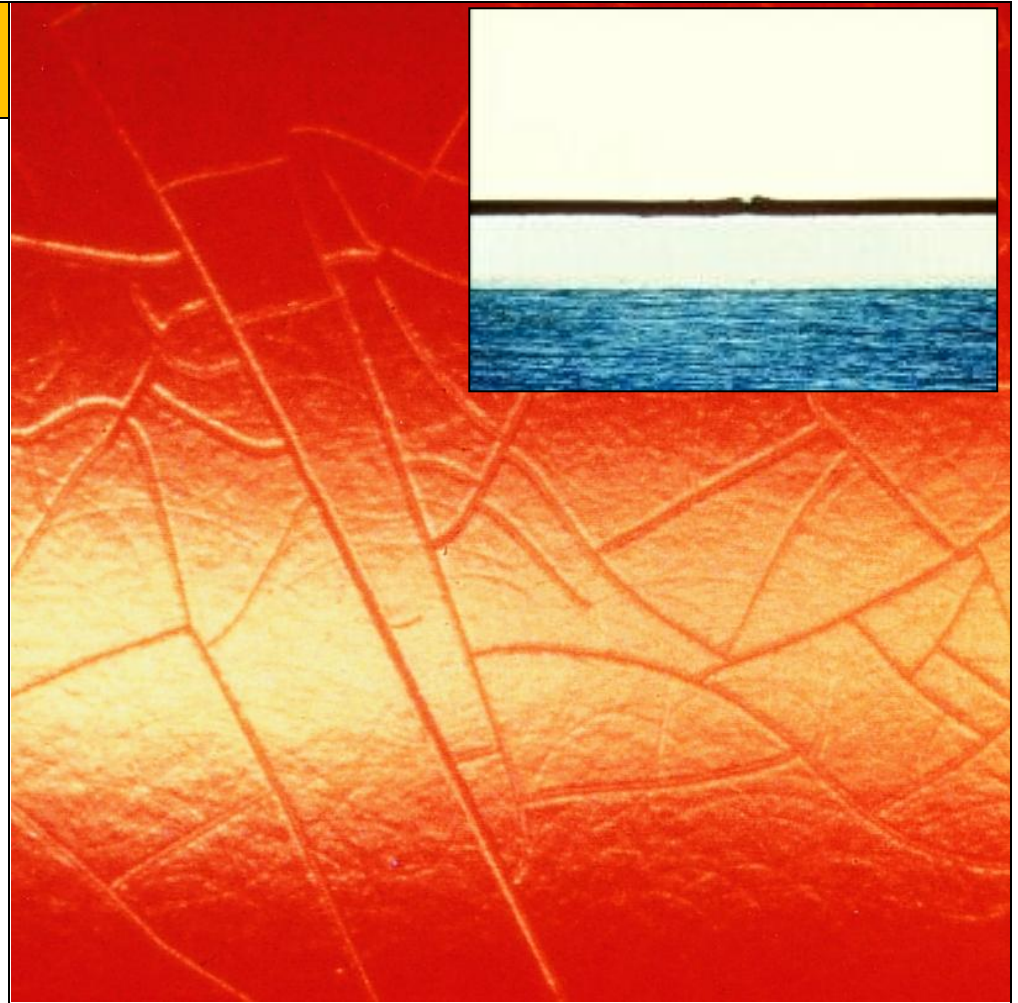
Slight chalking can be removed by polishing, and color can be protected with wax.
 If chalking process repeats rapidly, sand topcoat and re-spray.
 Strong chalking; sand topcoat and re-spray.




Description

After some time a widespread pattern of fine hairline cracks appear in the paint surface.

Cracks can go straight through all paint layers.



Cause
Prevention

	Wrong mixing ratio. Too much Hardener in 2 - K product. Too much Reducer in 1 - K product.	Mixing ratio of the product according Technical Data Sheet. Use mixing stick.
	Wrong Hardener / Reducer selected. Incompatibility of the different products.	Select only recommended products, see Technical Data Sheet.

Remedy

The only proper solution is to remove the cracked paint film completely to sound layer and re-paint.



Description

A small piece of the finish or even the total system seems to have broken away from the substrate.




Sometimes the underlying filler coat has broken as well.

This problem usually caused by stone chips.






Cause

Prevention

	Polyester body filler applied over Wash Primer .	Apply Polyester body filler <u>only</u> over bare metal or over Primer Surfacer EP.
	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 degreasers, contamination not properly removed.	Use recommended degreasers only (compatible product for substrate).
	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 of before the degreaser evaporates.
	No degreasing at all.	Wash with (preferably warm) water and soap and than 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.



	Cause	Prevention
	Using incompatible polyester for the substrate (system selection).	Use recommended products suitable for the substrate (system selection).
	Incorrect mixing. Not 100% mixing of the polyester with the peroxide hardener.	Mix according to recommendation. Do not stir when mixing, to avoid air inclusion in the mixture.
	Wrong Hardener selected.	Use recommended dedicated products only.
	Too fast Reducer selected (Poor flow, too much over-spray, condensation formation in humid conditions).	Select the Reducer related too ambient temperature, repair size and air flow.
	Wrong application technique: Too coarse application causes too much over-spray. Too short flash off times between application layers.	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.
	Excessive paint film thickness, application of filler / topcoat is too heavy.	Avoid application of thick paint layers; apply according to recommended spraying technique.

Remedy

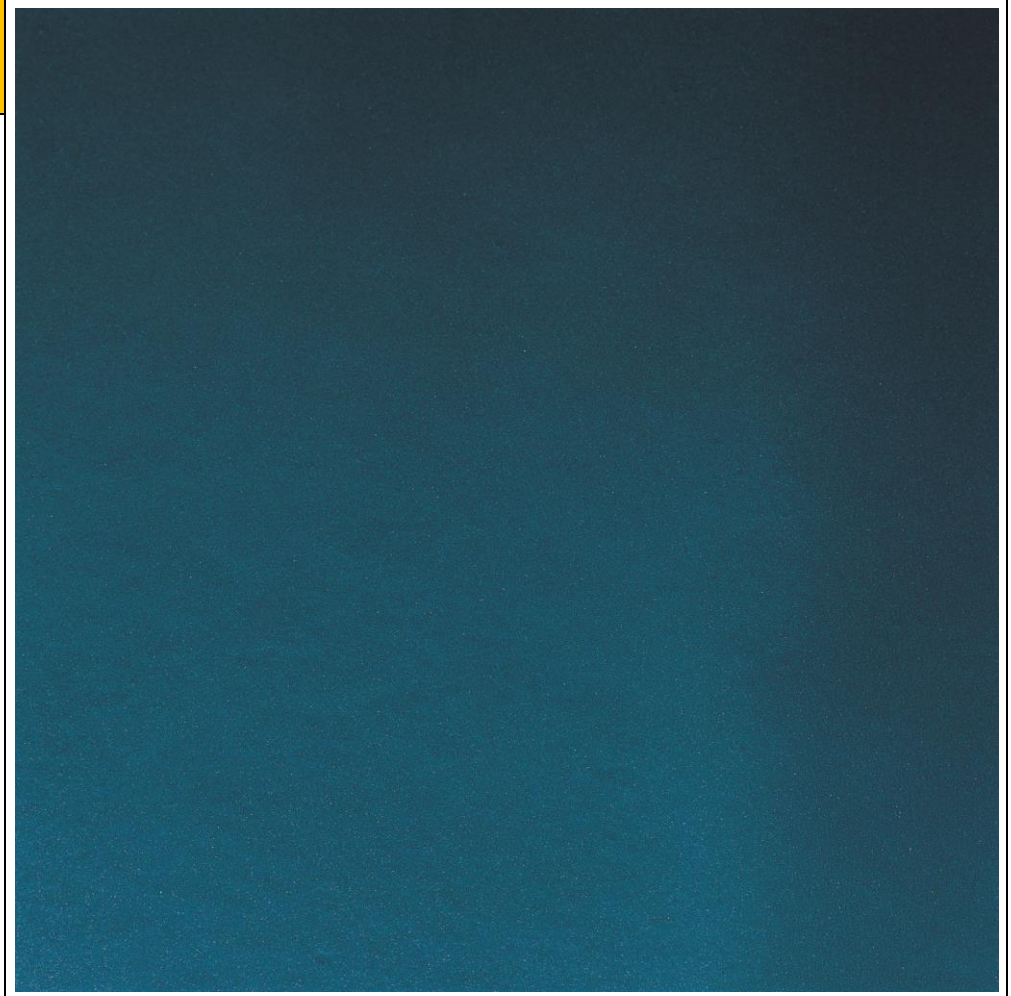
Even small chips if neglected, can become a foothold for corrosion to start. Touching with a small brush and paint should be carried out as soon as possible after the damage occurs to avoid rust and minimize the risk of further paint coming loose. More extensive damage will require preparation and re-painting.





Description

Cloudiness appears in metallic base-coats only.

The disorientation of aluminum pigments in the base-coat are causing a visible disturbance in the color appearance, known as cloudiness or mottling effect.



	Cause	Prevention
	Too fast Reducer selected so too fast evaporation of the Reducer.	Select the correct Reducer related to temperature, size of the repair and air flow.
	Incompatible Reducer not qualified for the product selected.	Only select the recommended Reducers for the product, according to Technical Data Sheet.
	Application of the base coat is too heavy and the metallic gets disorientated.	Apply according to recommended spraying technique.
	Wrong spray gun set up, incorrect air-pressure and / or spray gun distance.	Check spray gun set up and apply according to recommended spraying technique.

Remedy

When re-applying the base coat, apply according to recommendation.

When clear coat was sprayed: sand after drying with P500 dry or P1000 wet and re-spray according to recommendation.



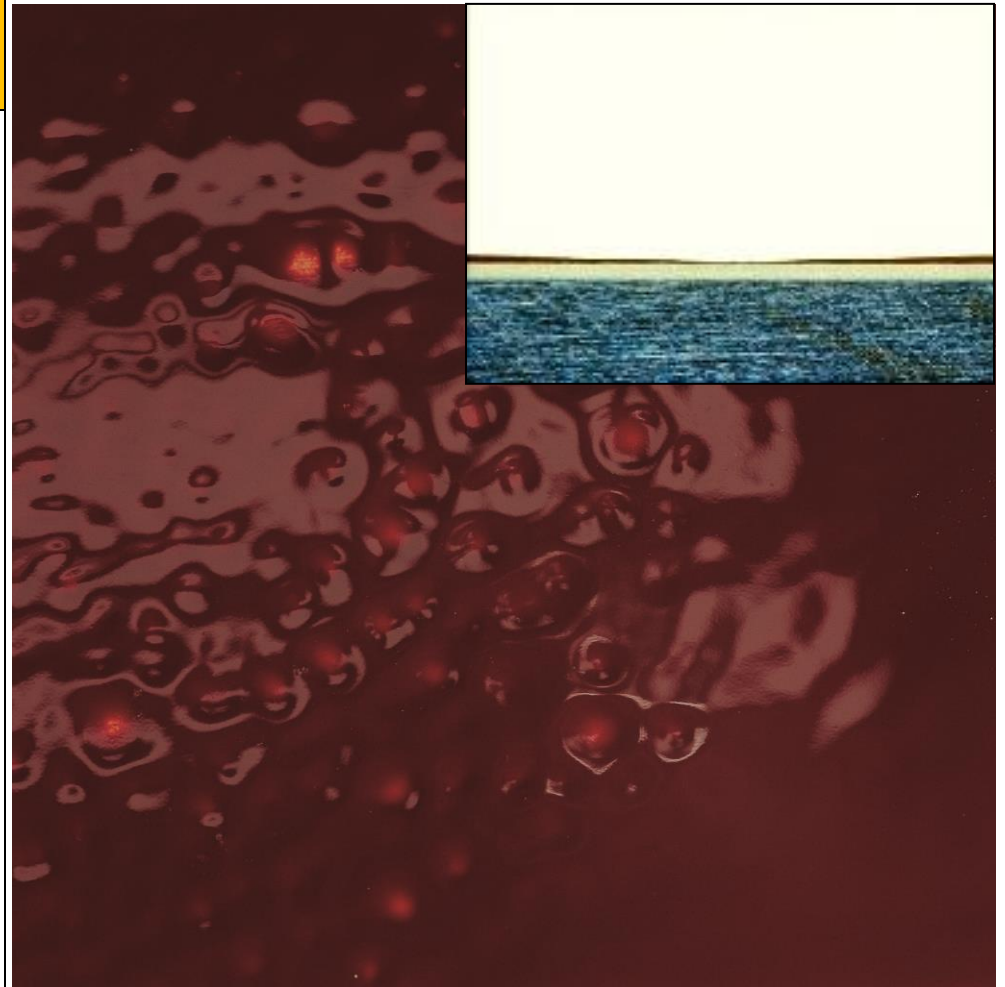
Description

**Surface is dotted with small local holes.
Paint film is surrounding contamination spots, sometimes visualizing the surface.**

Surface contaminants may be



- Grease
- Wax
- Polishing agent
- Dirt etc.

Especially contamination from silicone compounds often causes problems



Cause

Prevention

	Using unqualified degreasers, contamination not properly removed.	Use recommended degreasers only.
	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 evaporation.
	Compressed air contaminated with oil and water, due to poor maintenance and check ups.	Check oil level weekly, yearly maintenance of air system by qualified maintenance company. Replace filters according maintenance schedule.
	Poor housekeeping, dirty contaminated working area.	Keep working area clean and free from contamination.
	Poor maintenance, soot from the oil heater.	Check heater and heating system regularly.

Remedy

Sand the paint coat smooth. Degrease thoroughly after sanding.
 Apply a thin coat first and then the subsequent coats.
 Allow adequate flash-off time between coats.
 If necessary, sand and apply sealer or filler before applying the topcoat.






Description

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



Cause


Prevention

	<p>Polyester body filler is not suitable for the substrate (poor adhesion)</p>	<p>Select the correct body filler related to the substrate.</p>
	<p>Application of the body filler over the old (softer) finish.</p>	<p>Apply polyester body filler <u>only</u> on bare metal (substrate), or on top of Primer Surfacer EP.</p>
	<p>Application of products over Softer (TPA like) finishes.</p>	<p>By doing the thinner test, one can take precautions like;</p> <ul style="list-style-type: none"> • Removing the old finish totally <p>Isolating the old finish with a sealer, Wash filler 590 or Primer Surfacer EP.</p>
	<p>Degreasing The substrate was not degreased, or not degreased properly, this means the bodyfiller has not adhered. While sanding, the edges crumble away, leaving an irregular feathered edge to the area around the repair.</p>	<p>Always thoroughly degrease before sanding.</p>
	<p>Poor sanding of the feather edge (too short).</p>	<p>Sand according to the correct sanding steps and create a smooth and wide enough feather edge.</p>
	<p>Poor equipment, or incorrect sanding technique.</p>	<p>Use quality-sanding tools and use them correctly.</p>
	<p>Incorrect sanding steps</p>	<p>When dealing with softer paint systems, sand one step further with dry P400.</p>



Cause

Prevention

	<p>Application of the body filler over the old (softer) finish.</p>	<p>Apply polyester body filler only on bare metal. Avoid tension differences.</p>
	<p>Poor sanding of the featheredge of the body filler.</p>	<p>Sand according to the correct sanding steps and create a smooth feather edge from the body filler to the bare metal.</p>
	<p>Incorrect, too fine sanding steps where taken. When starting with a too fine sanding grit one will find difficulty in flattening the polyester bodyfiller.</p>	<p>Sand according to recommended sanding steps. (80-120-220-320-400).</p>
	<p>Application of 1-K body filler for big dents. Shrinkage will lead to contour mapping.</p>	<p>Use 2-K body fillers to fill dents, 1-K only for small holes or scratches.</p>

Remedy

Sand and remove total system to sound layer. Mostly till bare metal.
Apply a complete new system of primer / filler and topcoat.

In case of some small contour mapping, sand and apply the topcoat again.

- In case of extreme contour map.

Sand and remove total system, apply a complete new system of filler and topcoat.

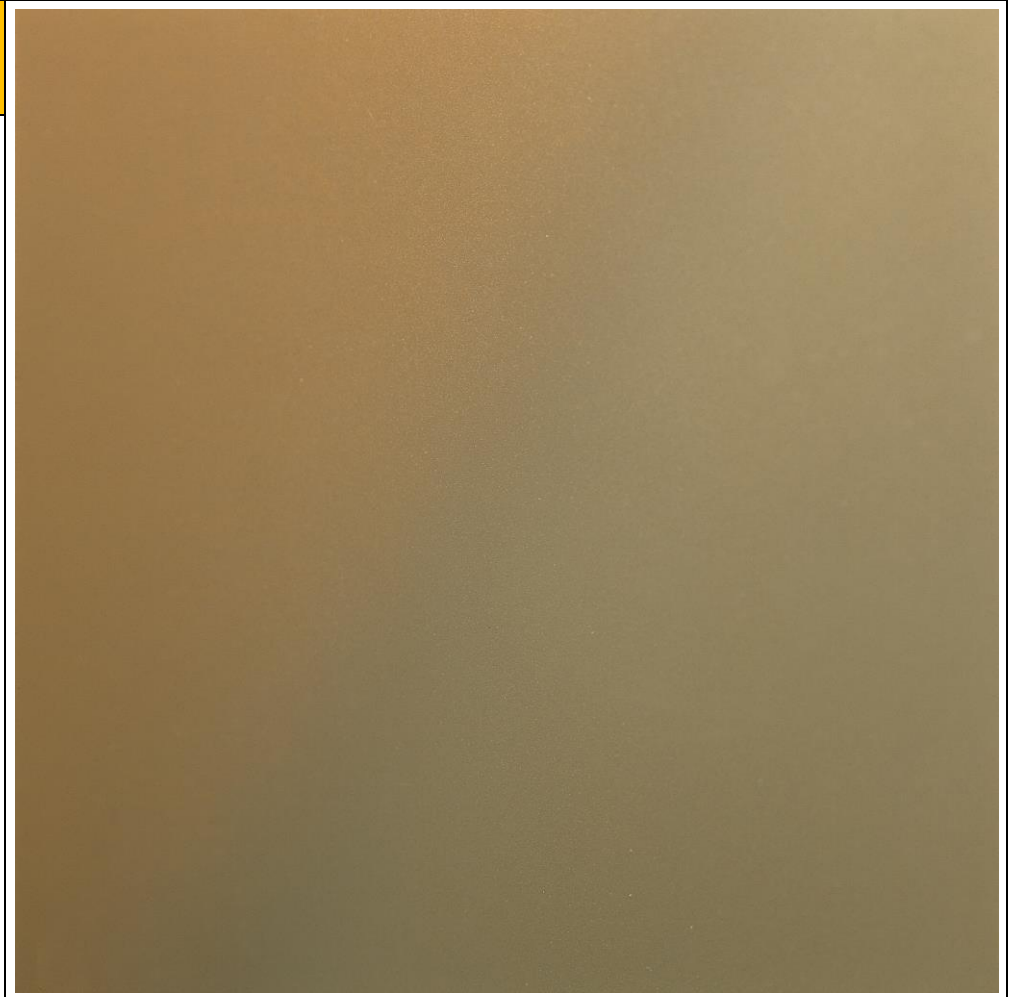
When contour map is not too extreme, flatten the affected area with a block and finish with very fine sanding paper.

Polish the area to high gloss and check if the contour mapping is no longer visible.





Description

Color shade of the repaired area, does not match the original color of the car.



Cause


Prevention

	Wrong Hardener and or Reducer selection.	Select only recommended Hardeners and Reducers for the product according to Technical Data Sheet.
	Incorrect mixing ratio.	Mix the components as mentioned in the Technical Data Sheet. Changing this mixing ratio influences the color.
	Wrong variant or color chosen when selecting the color code.	Select the right color or color variant. Correct stirring and sufficient tinting when necessary
	Color match is not checked using spray-out panel.	Check color using spray-out panel.
	Mixing of the formula was not closely followed.	Correct mixing of the color formula.
	Poor stirring of the mixed toners.	Stir and mix the 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 correct application technique.
	Excessive spraying of the mist coat.	Apply a mist coat according Technical Data Sheet.



Cause

Prevention

	Mixing colors on the mixing machine have not been stirred.	With the exception of water born paint, stir mixing colors on the mixing machine at least twice a day.
	Poor maintenance of the weighing equipment.	Keep scale clean and check yearly by qualified calibration company.
	Poor color documentation.	Keep color documentation clean and up to date.

Remedy

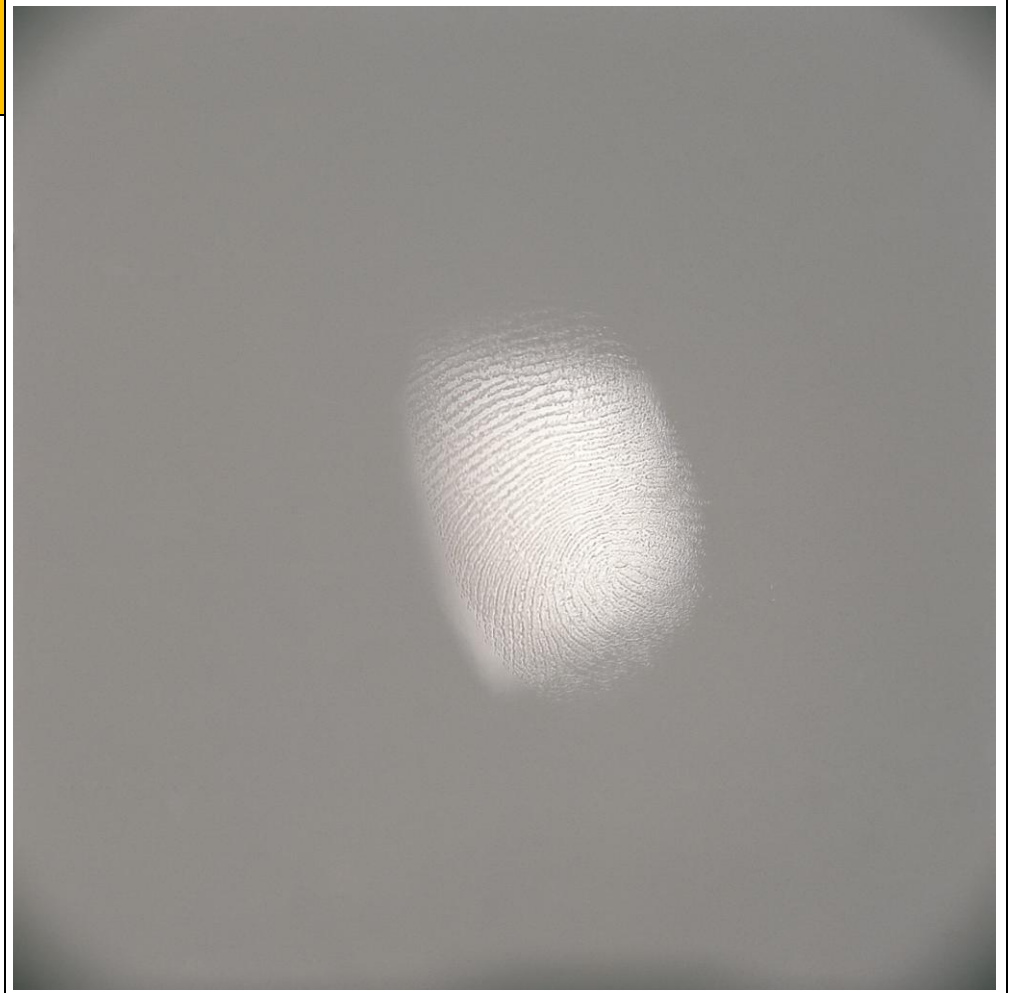
Sand the topcoat, mix the color again, check the color on a spray-out panel and re-apply the color again. Tint the color if needed.



Description



After a considerable length of time the body filler has still not hardened through.

In some cases it will never harden completely.



Cause



Prevention

	Not the correct mixing ratio Polyester body filler with Peroxide Hardener.	Mix with the correct mixing ratio.
	Hardener exceeded shelf life.	Notice shelf life of the hardener and keep track on expire date.
	Hardener was left open for a long time and reacted with moisture.	Keep hardener can or tube closed when not used.
	Wrong Hardener selection.	Select recommended (sometimes dedicated) Hardener.
	Incorrect mixing ratio, too much or too little Hardener.	Mix according Technical Data Sheet.
	Lid of the Hardener can was not closed.	Always close the lids of Hardeners when not in use. Always close lids of all products.
	Hardener defective due to expiration date.	Pay attention to the expire-date of the products. Notice that the shelf life of Hardeners is usually shorter than the topcoat product.

Previous

Index

Next

	Cause	Prevention
	Application of too heavy layers.	Apply normal layer thickness according to recommended application technique.
	Too low drying temperature.	Adhere to the recommended surface drying temperature according to the products' Technical Data Sheet.
	Too short drying time.	Adhere to the recommended drying time according to the product Technical Data Sheet.
	Drying temperature too low, temperature does not reach the level which is shown on the temperature meter.	Maintain the spray booth regularly and check meter indication.

Remedy

Sand the topcoat, mix the color again, check the color on a spray-out panel and re-apply the color again. Tint the color if needed. 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 it off with thinner or by sanding and re-spray again.

Previous

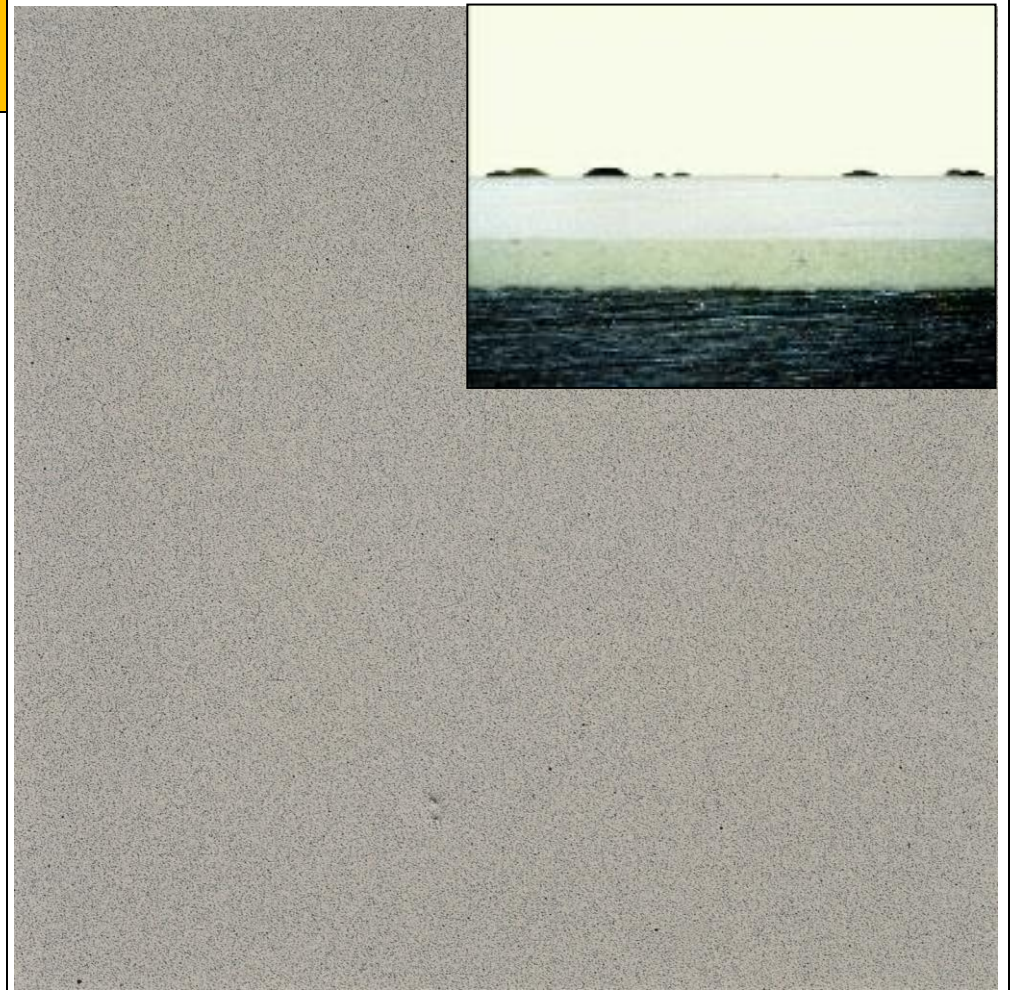
Index



Next

Description

Over-spray falls on freshly sprayed paint and is no longer absorbed.

The surface of the fresh paint has a sandy appearance because of the dry paint particles sticking to it.



	Cause	Prevention
	Wrong selection of Hardener / Reducer. Too fast Hardener, paint film is closing too fast. Too fast Reducer, paint film is closing too fast, too fast evaporation of the Reducer will result in too much atomization (spray-mist).	Select recommended Hardener and Reducer related to temperature, job size and air flow.
	Spraying pressure is too high which causes too much atomization.	Spray according to Technical Data Sheet recommendation.
	Spraying distance is too far.	Adjust spraying technique and apply from recommended spraying distance.
	Wrong spray gun set up Check spray gun set up and adjust accordingly.	Use a correct spray gun set up in relation to the product to be sprayed.
	Poor maintenance, dirty spray gun.	Use a clean and proper spray gun.

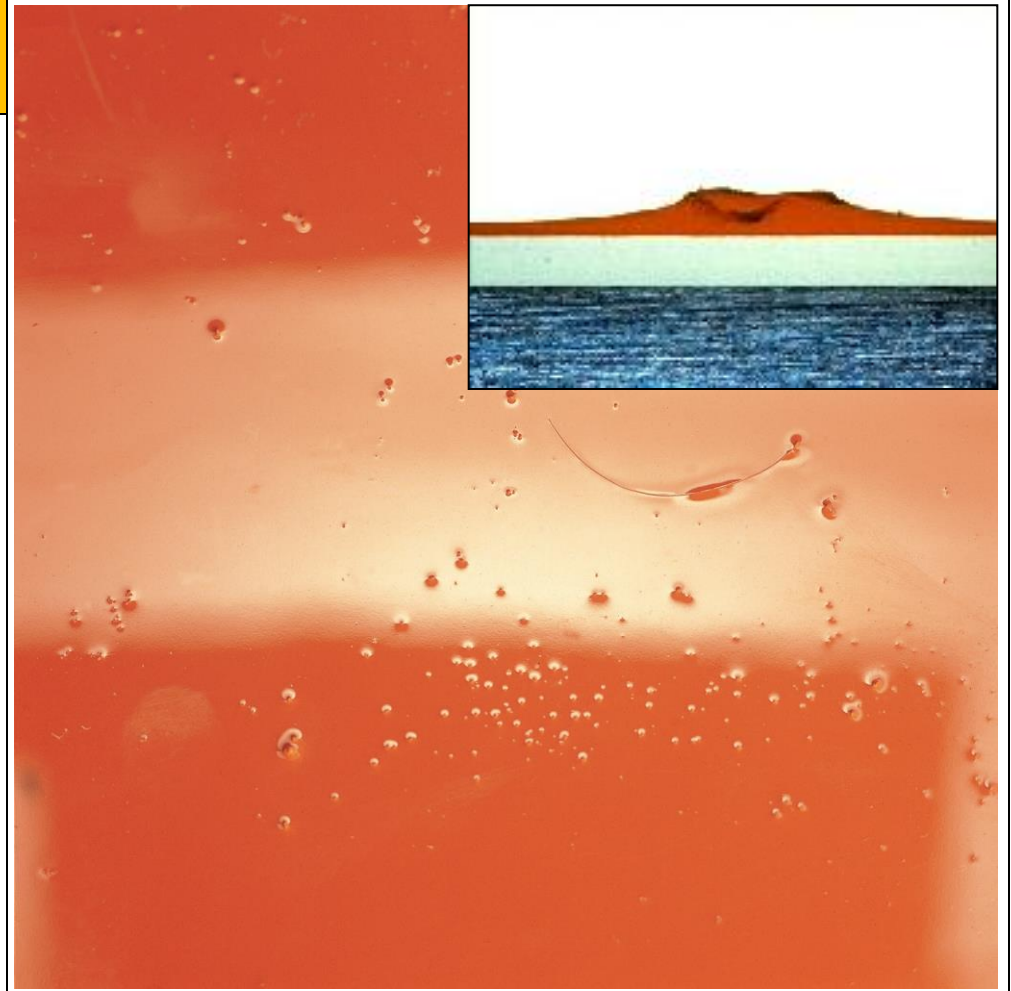
Remedy

In most cases polishing or light sanding and then polishing will be sufficient. In exceptional cases, sanding and re-spray will solve the problem.




Description

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




Cause

Prevention

	<p>Tack rag was not used to remove dust particles before spraying or over-spray between the base coat layers.</p>	<p>Always use a tack rag for removing dust particles and over-spray.</p>
	<p>Paint strainer was not used. Contamination in the paint was not filtered out.</p>	<p>Always use a paint strainer to filter out the contamination particles.</p>
	<p>Painter did not wear a suitable spray overall. Poor housekeeping and no preparation taken too minimize dust.</p>	<p>Always wear a suitable spray overall. Work as a painter clean and proper. Tack and blow off dust from vehicle and air hose prior to spraying. Always wear a head cover.</p>
	<p>Cheap masking tape / paper were used. Sometimes newspapers are used for masking.</p>	<p>Use quality masking paper and plastic, to minimize dust contaminations.</p>
	<p>No Anti-Static degreaser used. Unnecessary build up of electrical charge.</p>	<p>Use Anti-Static degreasers for cleaning plastic parts. Use earth clamp to neutralize charge.</p>



	Cause	Prevention
	Poor maintenance of the compressed air system. Poor maintenance of the spray booth.	Check oil level weekly, yearly maintenance of air system by qualified maintenance company. Replace filters according to maintenance schedule.
	Improper pressurization in the spray booth.	Check the spray booth pressure daily.
	Poor housekeeping.	Keep the surrounding area of the spray booth and mixing room clean.
	No dust prevention measures taken: <ul style="list-style-type: none"> • Tack rag overall, air hose, hair cap etc. • Earth clamp from car to floor. • 	A professional painter takes measures to minimize dust.

Remedy

- Dust particles can be removed with a needle when the paint is still wet.
 - Minor dust particles in the dried paint film can be removed by sanding with fine sanding paper and polishing.
- If dust particles are too big, there are too many, or when they are trapped too deep within the paint film, sand the surface and re-spray.



Description

Most colors consist of a 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.



Cause

Prevention

	Incorrect spraying distance, irregular and / or too close Application of the paint is too heavy, layers are too thick Overlaps are too small (much smaller than 50%).	Use proper spraying technique.
	Fluid nozzle too large.	Use correct spray gun set-up for the product.
	Spraying temperature too low.	Spray according to recommended temperature, between 20°C and 25°C.
	Object temperature is too cold.	Let object and paint acclimatize to ambient temperature.

Remedy

Let the paint flash-off for a longer period, apply a normal coat and finish.

Heavy floatation (almost up to runs), let the paint dry, sanding the topcoat, and re-spray with normal recommended coats.






Description

Freshly applied paint appears with a lower gloss level than wanted.



Cause


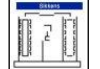
Prevention

	<p>Wax, polish or similar contamination has not been thoroughly removed and absorbed by the wet paint film.</p>	<p>Washing thoroughly with warm water and soap, followed by thoroughly degreasing (as recommended) before sanding and spraying.</p>
	<p>Insufficient through hardening of the filler, sanding scratches will go too deep in the surface. Topcoat will sink in the sanding scratches, resulting in a lower gloss level.</p>	<p>Sufficient through hardening of the filler by heating or IR. When total through hardening is reached, sand with recommended sanding grit.</p>
	<p>Too coarse sanding grit will appear with the same effect. Mostly also related to very small visible sanding scratches.</p>	<p>Use only recommended sanding coarseness.</p>
	<p>Insufficient through hardening, shrinking of filler or top coat after drying.</p>	<p>Follow the recommended drying times.</p>
	<p>Wrong product selection, too fast Reducer is used. Condensation can influence gloss level. Too coarse surface structure cause sinking of the clear coat.</p>	<p>Select the correct Reducer related too the repair size, temperature and airflow. Stick to the recommended flash off times.</p>
	<p>Incompatible Hardener and Reducer used. Incomplete through hardening of the product.</p>	<p>Always mix with the recommended products according to Technical Data Sheet.</p>
	<p>Wrong product selection, too slow thinner is used. Flash off times ignored. Clear coat is applied over base coat even while Reducers or water were not completely vaporized out of the base coat.</p>	<p>Select the correct Reducer related too the repair size, temperature and air flow. Stick to the recommended flash off times.</p>



Cause

Prevention

	<p>Application is too heavy; solvents are trapped and cause a dieback of the paint.</p>	<p>Apply normal coats as recommended.</p>
	<p>Flash off times are ignored, solvents are trapped and cause a dieback of the paint. The paint will shrink more than normal.</p>	<p>Apply normal coats and adhere to flash off times as recommended.</p>
	<p>Application is too heavy, followed by short flash-off time of the wet on wet primer / filler.</p>	
	<p>Drying time is too long and temperature is too high ($\pm 80^{\circ}\text{C}$).</p>	<p>Adhere to recommended drying temperatures and times.</p>
	<p>Insufficient ventilation from keeping the doors of the spraybooth shut while the car stays in the spraybooth overnight (without heating).</p>	<p>Let the drying cycle finish, leave the booth doors sufficiently open.</p>
	<p>Poor air circulation causes solvents to contaminate the spray booth during drying. The air contamination with these solvents will result in a dieback of the paint.</p>	<p>Check the valves of the spray booth air circulation system.</p>

Remedy

Once the drying cycle has started, always finish it. Never stop somewhere half way and then leave the job in the booth overnight (result will be a gloss level die-back).

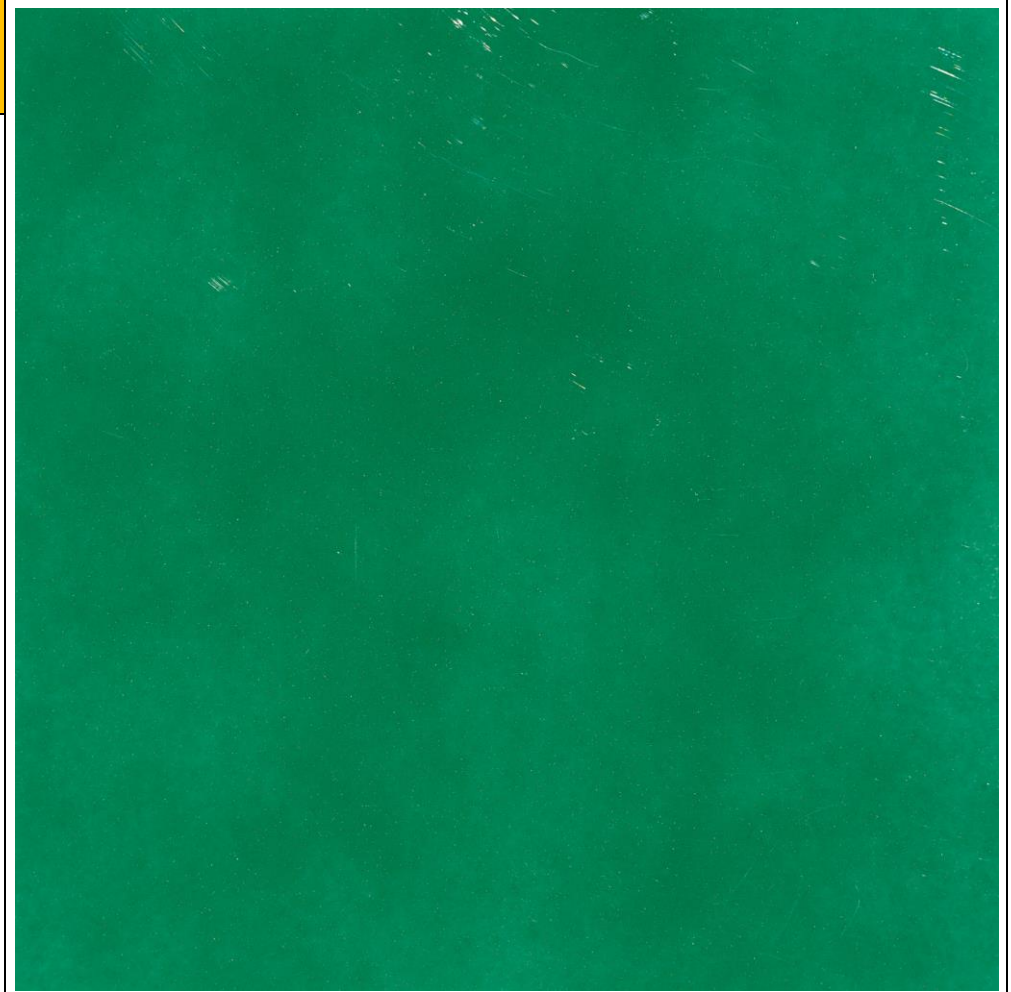
Raise gloss level by polishing. If this has no, or not the expected result, sand lightly (wet 1200 / 1500) and re-apply the clear coat. For topcoat sand with P1000 and apply topcoat again.





Description

The substrate or the repair spot is visible through the top coat.

This often occurs on surfaces that are difficult to spray or on angles and edges.



	Cause	Prevention
	<p>Poor overlapping of the coats. Irregular spraying distances. Ignoring flash-off times.</p>	<p>Apply according to recommended spraying technique. Look at the paint flow and check visually if the repair spot is covered. Work under sufficient lightning. Check color covering power before application.</p>
	<p>Lightning inside the spray booth is insufficient. Wrong color strength or old lightning that needs to be replaced.</p>	<p>Use recommended color strength for the spray booth. Use the right amount of lightning and under the correct angle. Replace the tubes after indicated numbers of hours in use.</p>

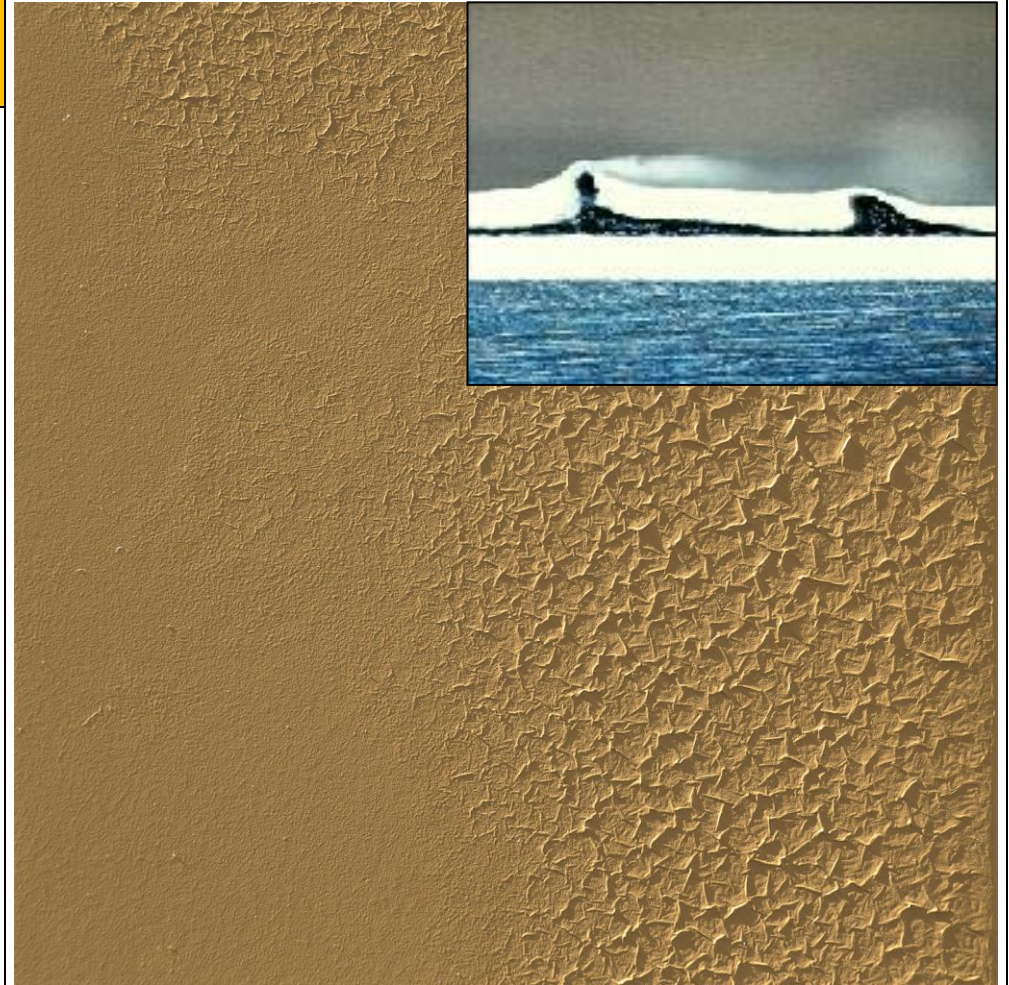
Remedy

When still spraying, apply extra coats until opacity is reached.
After drying, scuff or sand (depending on the time after drying) and re-apply topcoat until opacity is reached.






Description

During application of a product, the paint film partially dissolves



Cause

Prevention

	<p>Selection of incompatible products with the substrate. Soft, TPA like paint system repainted with a solvent borne base coat.</p>	<p>Do the thinner test, seal or remove existing substrate when needed.</p>
	<p>Insufficient adhesion to substrate of previous applied product.</p>	<p>Select recommended products (primers / fillers) related to substrate.</p>
	<p>The degreaser is too aggressive related to the Substrate, the Primer, the filler, the previous applied top coat or the existing old finish.</p>	<p>Check, (especially with new plastic parts) if you are not sure on an edge or non-visible side of the part / panel if the degreaser will not be too aggressive.</p> <ul style="list-style-type: none"> • Think about M600, which is sometimes too aggressive for new plastic bumpers. These can only be cleaned with water and soap or Autowave Degreaser. M700 is too aggressive when the car is freshly painted.
	<p>Application is too heavy with solvent borne product. Substrate was too sensitive for the solvents.</p>	<p>Apply thinner layers and flash off well between the layers. Apply sealer coat if needed.</p>

Remedy

The lifted paint needs to be removed completely down to a sound layer.
If necessary a new primer and or filler needs to be applied.





Description

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



Cause

Prevention

	Wrong mixing ratio, too high spray viscosity, the paint is too thick and flows poorly.	Mix according to Technical Data Sheet.
	Wrong Hardener selection.	Select the recommended Hardener.
	Wrong Reducer selection related too temperature, job size and air flow.	Select the correct Reducer related too temperature, job size and air flow.
	<ul style="list-style-type: none"> • Incorrect spraying distance, irregular or distance too far • Too heavy application of the paint, layers are too thick • Too large and / or irregular overlaps • 	Apply according to the recommended spraying technique.
	Spray gun set-up too large or too small.	Use correct spray gun set-up for the product as per Technical Data Sheet.
	Spraying temperature is too low.	Spray according to recommended temperature, between 20°C and 25°C.
	Object temperature is too cold.	Let object and paint acclimatize to ambient temperature before spraying.

Remedy

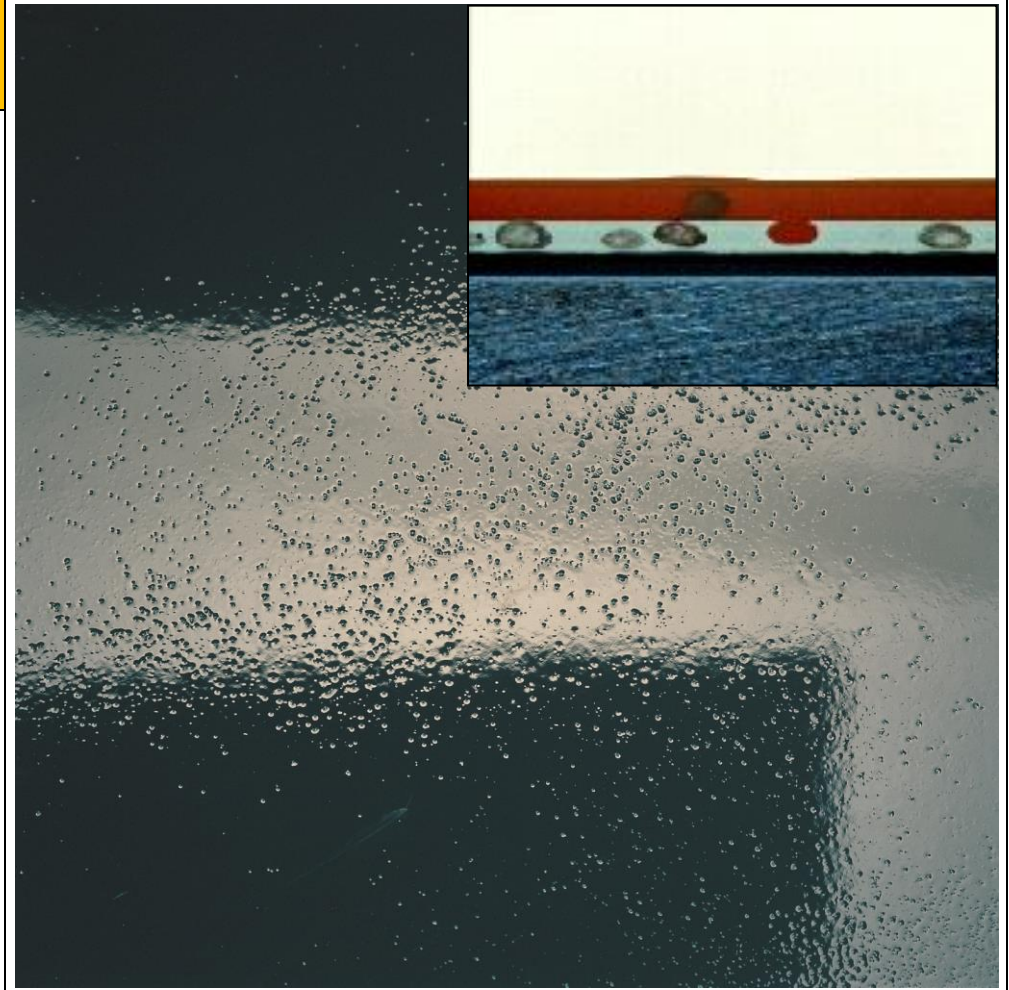
Slight orange peel effect can be removed by sanding and polishing to restore gloss and flow level. When orange peel is more serious the surface must be sanded and re-sprayed.



Description




Body filling: air becomes trapped in the body filler during filling. Sanding will open the surface, causing small holes.

Primer / Filler: Too heavy application of (2K) filler, not respected flash off time, blow drying between coats can result in solvent pops. During sanding the filler, the solvent pops become little pinholes.



Cause

Prevention

	Wrong mixing technique; do not stir to avoid air inclusion.	Mix according to recommendation.
	Wrong application technique, incorrect knife angle during application.	Apply the products with recommended tools, at the right angle.
	Extension of the pot-life of the body filler.	Apply the polyester body filler before pot life is exceeded.
	Drying out of the body filler.	Close can after use. After opening a new can, mix the binder thoroughly with the bodyfiller.
	Application of the paint too heavy Too much layer thickness. Too short flash-off times between application and drying. Too much airflow (formation of a viscous surface skin).	Apply the products according to recommendation and Technical Data Sheet.
	Exceeding the potlife of the paint.	Use the product within the pot life, according Technical Data Sheet. Do not attempt to extend the pot life by adding extra Reducer.
	Too fast air flow inside the spray booth. Too intense forced-ventilation. (Formation of a viscous surface skin).	Maintain the spray booth regularly, check the air flow.
	Too high drying temperatures	

Remedy

Sand the paint or filler to remove pinholes as much as possible, if needed, apply filler (according to recommendations). Dry and sand the filler, and apply topcoat system again.



Description

Paint system has been forced up over small areas, in strange patterns or as blisters.

When punctured we discover rust and moisture on the metal surface.



Cause

Prevention

	Previous rust was not properly removed.	Remove existing rust thoroughly, particularly pitted corrosion.
	Application of the topcoat directly over bare metal.	Always apply recommended primer followed with filler for optimal warranty.
	Substrate was insufficiently degreased, primer could not adhere well.	Always degrease sufficiently before application of the primer, degrease according recommendations (two clean cloths, one wet one dry).
	Substrate was insufficiently degreased, contamination stays at surface, will cause blisters and results in rust formation.	Always degrease sufficiently before application of the primer, degrease according recommendations (two clean cloths, one wet one dry).
	Wrong mixing ratio. Influences the cross linking so, no optimal adhesion and rust protection.	Mix according Technical Data Sheet.
	Insufficient layer thickness was applied.	Apply according to Technical Data Sheet recommendation.
	Premature application of products after degreasing. Condensation forming at substrate.	In humid conditions, let panel acclimatize before applying primer / filler / top coat .

Remedy

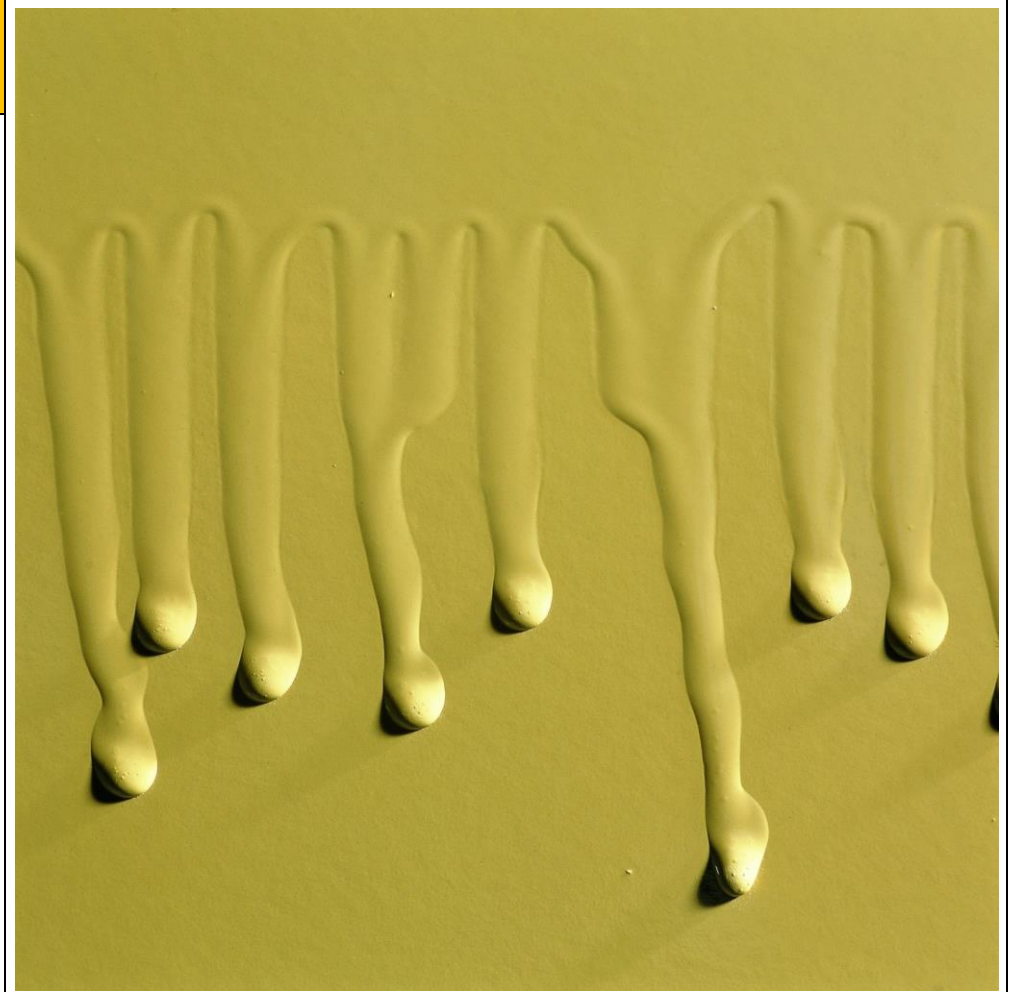
Remove entire system, remove thoroughly all rust (preferably by sand- blasting), degrease and apply total new system



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.



Cause

Prevention

	The substrate has not been properly degreased.	Paint runs because it cannot properly adhere to the surface.
	Wrong Reducer selected related too temperature. Spray temperature is too cold, Reducer selection too slow.	Select the correct Reducer related to spray temperature, job size and air flow.
	Wrong mixing ratio of the paint. Spray viscosity is too low, the paint is too thin.	Mix the products according the Technical Data Sheet.
	Wrong spraying technique; Incorrect spraying distance, irregular and / or too close Application of the paint is too heavy, increasing film thickness Overlaps are too small, much less than 50%.	Apply product using the proper spraying technique.
	Spraygun set-up is too large.	Use correct spraygun set-up for the product.
	Spraying temperature is too low.	Spray according to recommended temperature, between 20°C and 25 °C.
	Object temperature is too cold.	Let object and paint acclimatize to ambient temperature before spraying.

Remedy

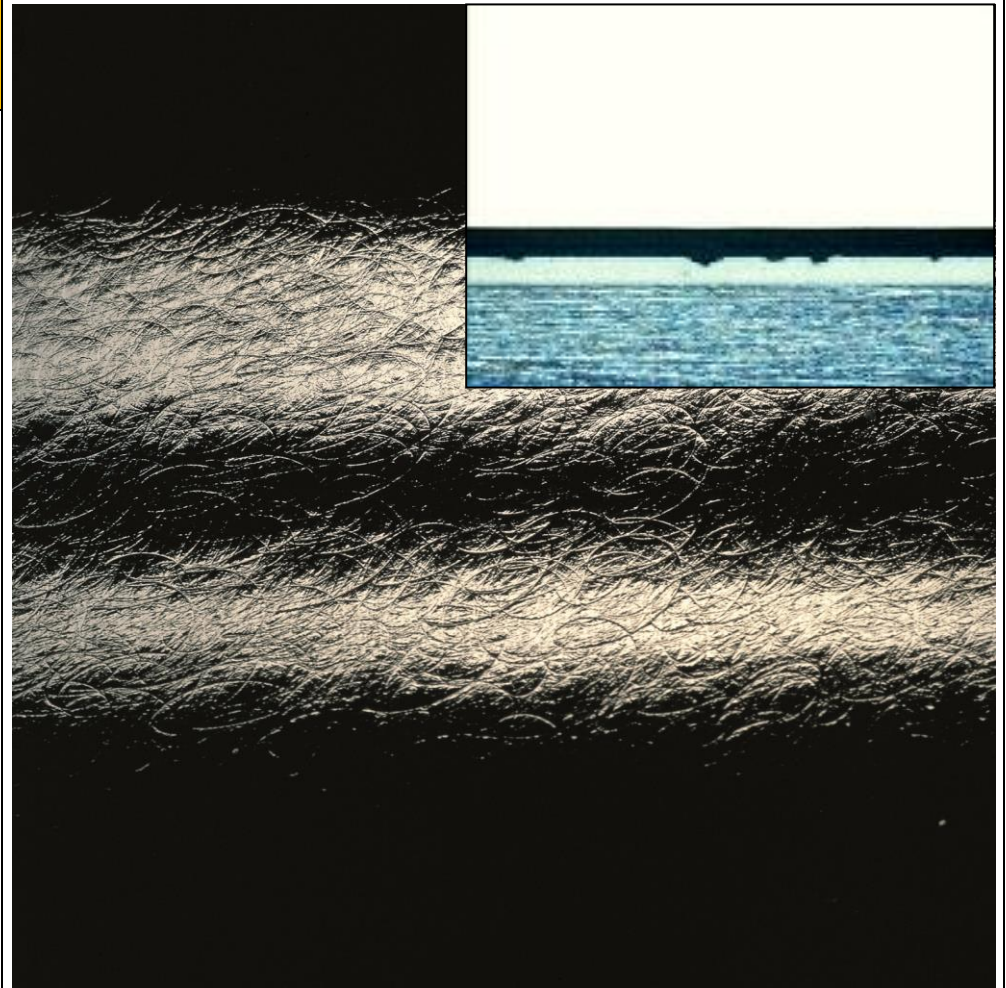
Small runs can be sanded away with fine sanding paper; surface can be polished back to gloss.
In case of sanding through the topcoat, re-spraying is needed.



Description


**Fine scratches become visible in the finish.
Problem can reveal immediately or after a period of time.**

Often sanding patterns of sanding machine or block is visible.



Cause

Prevention

	The "100" rule is not followed.	Use recommended sanding steps. Apply guide coat between sanding steps.
	Filler was not sufficiently through hardened.	Stick to the recommended through hardening time.
	Grit or dirt causing scratches during sanding.	Clean and degrease properly before sanding, use recommended sanding paper.
	Too course sanding material caused scratches.	Do not use machine-sanding paper for sanding by hand, sanding grits are too course for sanding by hand.

Remedy

After complete through hardening, sand the topcoat with recommended sanding grits until scratches are no longer visible, and re-apply the top coat again.



Description


If paint is stored for a longer period, certain pigments can sink to the bottom of the can. This is caused by weight differences of the pigments.

The paint is no longer a homogeneous mass.

Extreme settlement is also called hard-caking.

A little settlement is also called soft-caking.



	Cause	Prevention
	Too high or too low storage temperature.	Try to keep the storage temperature at, $\pm 20^{\circ}\text{C}$, without too many temperature fluctuations.
	Shelf life of the paint has been exceeded.	First in first out rule when supplementing stock.
	Mixing toners on the mixing machine are not regularly stirred.	Stir the toners on the mixing machine for 15 minutes, twice a day, in the morning and after lunch.
	Paint has been stored for too long in a thinned condition.	Do not store thinned paint too long.

Remedy

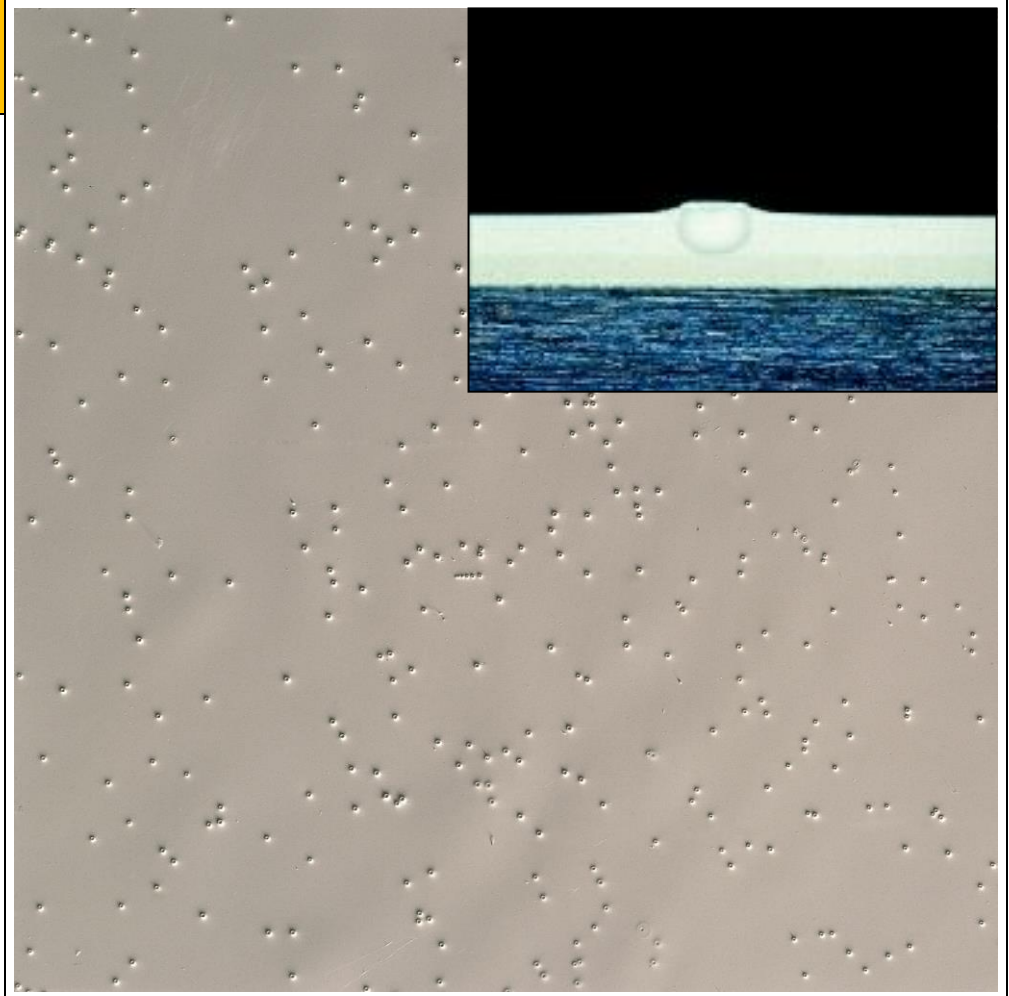
If shelf life has **not** been exceeded and the temperature has **not** adversely affected the quality of the paint, you can put the paint in a paint shaker, or stir for at least 15 minutes on the mixing machine.



Description



Small pops (open on top) can be seen on the freshly dried surface.

Solvents becoming trapped inside the paint film and will “pop” open during or after drying of the topcoat.



Cause


Prevention

	<p>Too fast reducer selected. Can occur especially in hot conditions due to quick drying of the paint film causing solvents to be trapped underneath the closed paint film.</p>	<p>Select the recommended Reducers related too temperature job size and air flow.</p>
	<p>Too slow Reducer selected. Solvents will be trapped when following coats will be applied.</p>	<p>Select the recommended Reducers related too temperature job size and air flow.</p>
	<p>Wrong or other brand/poor quality product selected.</p>	<p>Select recommended products, suitable for the product only.</p>
	<p>Application is too heavy. Too much time needed for evaporation of the solvents.</p>	<p>Apply normal layers as recommended.</p>
	<p>None, or flash off time is too short. Too fast application of the different layers. Next coat is applied too soon.</p>	<p>Adhere to recommended flash off time. When applying heavy coats, extend the flash off time.</p>
	<p>Force dried with IR too quickly, no flash off time.</p>	<p>Before using the IR dryer, always take note of the recommended flash off time.</p>
	<p>Drying temperatures too high.</p>	<p>Keep drying temperature at recommended level according to the Technical Data Sheet.</p>



Cause

Prevention

	<p>Too fast air flow inside the spray booth. In combination with intense forced-ventilation which will rapidly cause formation of a surface skin.</p>	<p>Maintain the spray booth regularly, check the air flow.</p>
	<p>Too high drying temperatures.</p>	

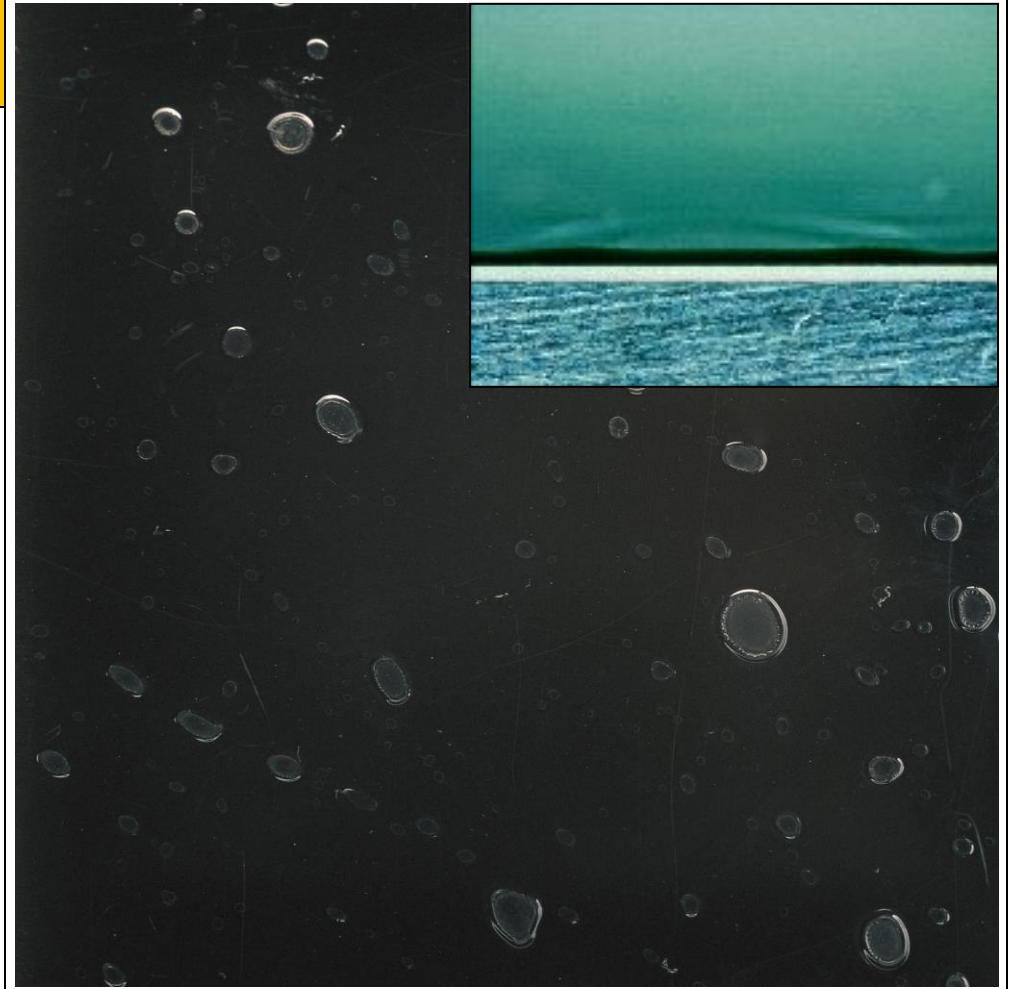
Remedy

To repair, sand the solvent pops and they will become fine pinholes.
If there are many pinholes it is advised to sand the total panel and apply 2-3 coats of 2K filler.
After sanding the 2K filler re-apply topcoat.





Description

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



Cause

Prevention

	Wrong mixing ratio. Incorrect amount of Hardener used, causing poor through hardening of the paint.	Mix always according to Technical Data Sheet recommendations.
	Wrong type of Hardener selected, (fast or slower).	Select recommended Hardener, related to temperature, job size.
	Wrong Hardener selected, being incompatible with the product.	Always select recommended Hardeners. See Technical Data Sheet.
	Heavy paint coat application will cause insufficient through hardening within the recommended drying time.	Apply normal coats according to recommendation. Extend drying time.
	Paint coat has not completely hardened through. Freshly painted surface has been exposed to rain or water drops while it was cooling down.	Allow the fresh paint to cool down before exposure to water.

Remedy

Polish the surface until the watermarks disappear (if necessary use ultra fine sand paper first).

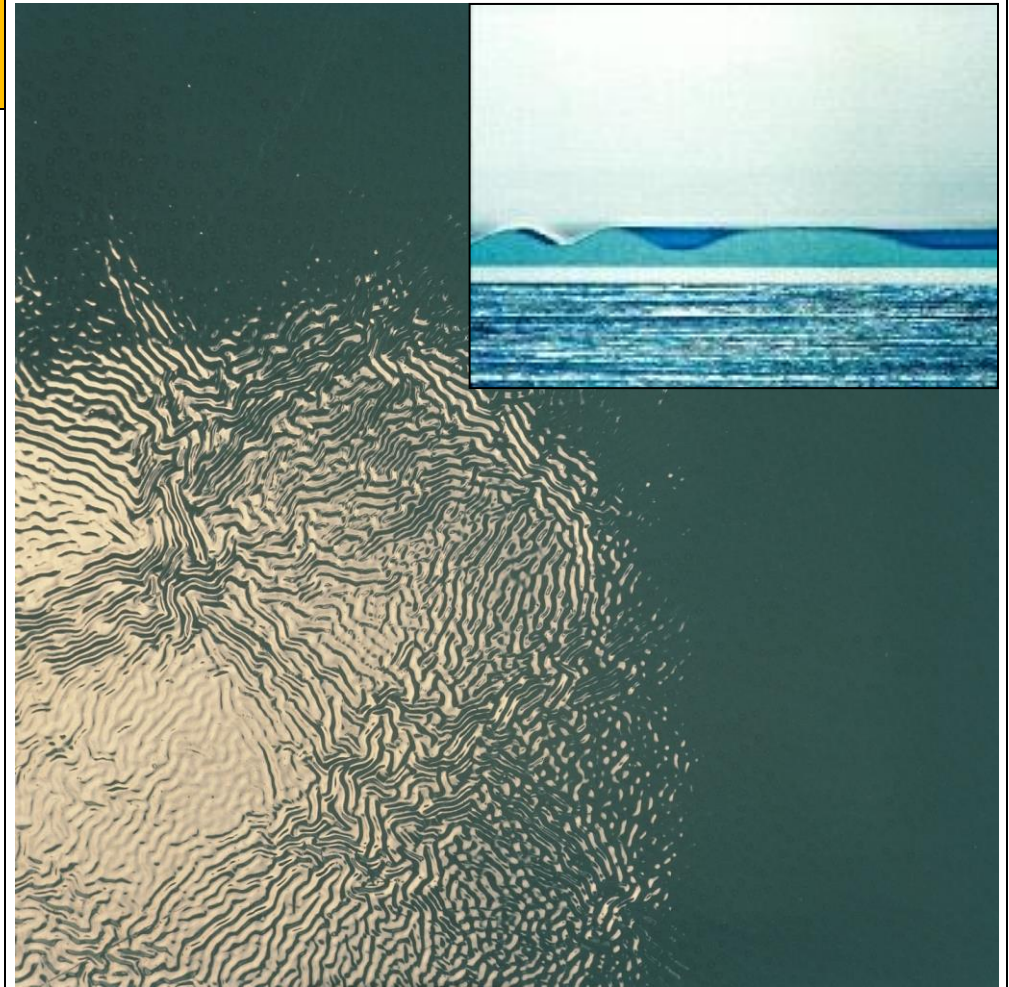
If the watermarks are still visible after polishing, sand surface according to recommendation and re-spray the affected parts.



Note: in case that the selected Hardener is not compatible (paint will not fully through hardened); remove total system and apply a new paint system.



Description

The paint surface acquires a finely waved appearance.



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

Remedy

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




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.



Cause

Prevention

	<p>Wrong application technique, mist coat applied too course. No tacking between the layers.</p>	<p>Apply according to recommendation. Tack between every base coat after flash off.</p>
	<p>Flash off time was insufficient or not adhered to. Solvents or water residue is trapped between the base coat and the clear coat. This can cause adhesion problems between the base and the clear coat.</p>	<p>Flash off sufficiently between layers.</p>
	<p>Wrong mixing (too low in viscosity), related to increased layer thickness.</p>	<p>Mix according to product Technical Data Sheet, avoid excessive layer thickness.</p>

Remedy

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

