

WEG Coatings Catalog

PAINTING DEFECTS

CAUSES, PREVENTION AND CORRECTION



Motors | Automation | Energy | Transmission & Distribution | Coatings

In order to ensure a greater productivity and total quality in the coating application, we listed the main painting defects that occur in the daily routine of automotive refinishing.

DEFECT

POSSIBLE CAUSES

PREVENTION

CORRECTION

ADHESION FAILURE

The paint peels or comes off the substrate in large or small areas, and it may affect more than one layer.



1. Inappropriate surface preparation and/or cleaning;
2. Use of products of different brands;
3. Wrong coating system;
4. Improper putties and primers;
5. Presence of grease, oils, waxes, silicone, sanding residues, polishing residues;
6. Improper cleaning of the surface to be painted;
7. Use of improper diluent for the line;
8. Failure to comply with the drying time (in the case of varnishes, application over the dried base).

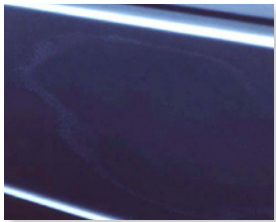
1. Check the type of substrate to be painted;
2. Do not use products of different brands;
3. Do not use incompatible systems;
4. Carefully clean the substrate with the recommended products;
5. Check the recommended sandpaper grit size;
6. Pay attention to the number of coats; too many coats may cause lack of adhesion.

Carefully sand and clean the substrate.

Remove loose paint layers, and reapply the system observing the product compatibility.

MAPPING

Marks and drawings are formed with differences in tone and gloss on the painted surface after the paint dries.



1. Use of products of different brands;
2. Inadequate catalysis (insufficient catalyst);
3. Insufficient drying of the previous coats;
4. Excessive layer of primer or body filler;
5. Lack or inexistence of primer coat for sealing areas with body filler;
6. Use of inadequate catalyst and/or diluent;
7. Use of diluent whose evaporation is too slow;
8. Painting over incompatible materials;
9. Use of improper sandpaper grit size;
10. Application of body filler (polyester or plastic putty) over the paint coat.

1. Completely degrease the substrate before sanding it;
2. Carefully sand the area to be repaired;
3. Apply polyester body filler over the bare sheet or over the epoxy primer;
4. Respect the thicknesses and drying times of the paints according to the Data Sheet recommendation;
5. Make sure the product is diluted and catalyzed as recommended on the Data Sheet;
6. Keep the substrate and the body filler edges leveled;
7. Apply the primer respecting the interval between coats;
8. Remove the layers of products down to the bare sheet where the polyester/plastic body filler will be applied; keep the sheet bare around the repaired area; the body filler cannot cover layers.

Sand it until completely smooth.

Redo the coating system.

BLEEDING

The freshly applied topcoat shows yellow or reddish stains.



1. Excess of catalyst in the polyester body filler;
2. Improper mixture (catalysis) between catalyst and body filler;
3. Painting over contaminated surfaces;
4. Inadequate flash-off time;
5. Improper solvent.

1. Thoroughly degrease the repaired area;
2. Perform the correct product catalysis to ensure the complete removal of contaminants;
3. Properly homogenize the paints.

Eliminate all layers including the Polyester Body Filler and redo the coating system.

DEFECT

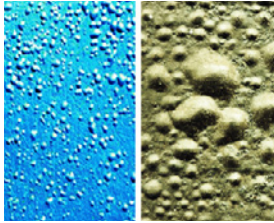
POSSIBLE CAUSES

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BLISTERING

Structural film defect characterized by the appearance of bumps that vary in size and intensity. Bubbles can contain liquid or gas.



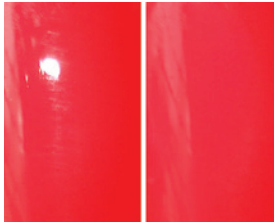
1. Surface containing soluble salts (osmosis), rust, retained moisture;
2. Quick drying of the surface;
3. Use of thinners not recommended;
4. Excessive moisture in the substrate or in the environment;
5. Retention of solvent or air trapped between the film and the substrate;
6. Water in compressed air, high relative humidity;
7. Application on very hot surfaces;
8. Incompatibility between layers (materials from different manufacturers).

1. Correct cleaning of surfaces to remove contaminants;
2. Use a thinner and thickness recommended in the technical bulletin;
3. Control of environmental conditions;
4. Removes moisture from the surface of the piece;
5. After sanding dry paint, I recommend blemishes. If necessary, remove all ink;
6. Use a water and oil filter in the compressed air line;
7. Application respecting hand intervals;
8. The workshops near the seashore are washed with plenty of fresh water between layers.

Remove paint applied to damaged area and reapply.

LOSS OF GLOSS

The freshly applied paint coat does not show the gloss according to the product specifications.



1. Absorption of wax or dirt;
2. PU primer is wet or not completely dry;
3. Drying diluent too accelerated;
4. Improper catalyst or diluent;
5. Incorrect mixing of the components;
6. The interval between coats was not observed; see Data Sheet;
7. Incorrect drying time;
8. Excessive sanding or polishing of the topcoat;
9. Use of diluent not recommended for polyurethane systems (primers/coatings/varnishes).

1. Thoroughly degrease the repaired area;
2. Perform the correct product catalysis, as indicated on the Data Sheet;
3. Observe the coating thickness according to the Data Sheet;
4. Observe the flash-off time;
5. Apply the number of coats indicated on the Data Sheet;
6. Check the painting booth conditions and perform periodic maintenance;
7. Always use the diluent recommended by the manufacturer. Note: Thinners (with alcohol in the composition) should not be used in polyurethane systems.

In simple cases, polish it to increase the degree of gloss.

In more complex cases, wait for the complete drying, sand it until a uniform surface is obtained and repaint it.

STAINING

Lighter and darker stained areas on metallic painting.



1. Improper spray gun type;
2. Incorrect adjustment of the air pressure;
3. Paint flow too open or too closed;
4. Improper distance between the spray gun and the surface to be painted;
5. Use of improper catalyst and/or thinner;
6. Improper handling of the gun during application;
7. Application of too thick coats;
8. Flash-off time too short.

1. Correct adjustment of the spray gun;
2. Uniform application of the basecoat;
3. Observe the indicated solvent evaporation times;
4. Properly homogenize the paint;
5. Use a spray gun for paint and varnish application with 1.3 - 1.5 nozzle.

Wait for the complete drying; sand the surface and repaint it only with topcoat; it is not necessary to reapply the primer.

DEFECT

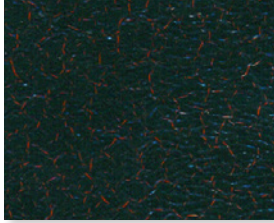
POSSIBLE CAUSES

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CRACKING

Scratches or cuts (cracks) of various lengths and depths.



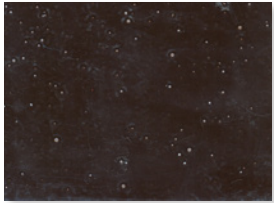
1. Painting performed with low quality materials;
2. Application of paint over inadequate primer;
3. Excessive layers of primer or body filler;
4. Insufficient drying of the previous coats;
5. Refinishing over old base, already cracked;
6. Extreme temperature oscillations.

1. Use diluent and catalyst recommended for the ambient conditions (temperature, air circulation, etc.);
2. Adjust the painting equipment according to the product technical specifications;
3. Apply the recommended number of coats;
4. Observe the flash-off time;
5. Keep the correct distance between the part and the drying panel;
6. Perform the exposure for drying via infrared.

Remove all layers from the affected area up to the sheet and redo the coating system.

CRATERING (FISH EYES)

Emergence of craters with fish-eye appearance.



1. Insufficient degrease;
2. Compressed air contaminated with water or oil;
3. Spray booth contaminated with silicone;
4. Lack of compressed air maintenance.

1. Use the recommended degreaser and avoid excesses;
2. Use disposable paper towels, preferably one for degreasing and one for drying the surface;
3. Do not use silicone products near the painting environment;
4. Use filters in the compressed air line, eliminating contamination by water or oil;
5. Purge the air compressor and check it periodically.

Degrease the affected area and sand it until completely smooth. Then reapply the recommended coating system until obtaining the desired thickness.

FAULTY DRYING

After applied, the paint will not dry properly, taking longer than specified and presenting problems in the film hardness.



1. Improper catalyst;
2. Ambient temperature too low;
3. Paint film too thick;
4. Insufficient temperature in the booth;
5. Wrong component catalysis;
6. Primer film too thick;
7. Flash-off not observed.

1. Use only the recommended catalyst and in the proportion recommended on the Data Sheet;
2. Do not apply in layers out of the Data Sheet specification;
3. Use drying accelerator when at very low ambient temperatures (below 20 °C). Contact WEG's Customer Service for further information.

Increase the drying time beyond the requirement. If there are no results, remove thin layers with diluent or sandpaper to reapply the system immediately.

DEFECT

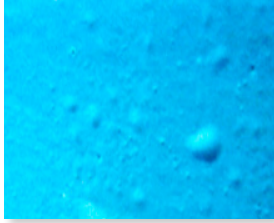
POSSIBLE CAUSES

PREVENTION

CORRECTION

BOILING

Painting surface modifications like small bubbles.



1. Use of improper diluent;
2. Overly fast evaporation thinner was used;
3. Overly viscous paint;
4. Application over hot part;
5. Forced drying;
6. Insufficient drying time between wet over wet application products.

1. Use diluent and catalyst recommended for the ambient conditions (temperature, air circulation, etc.);
2. Adjust the painting equipment according to the product technical specifications;
3. Apply the recommended number of coats;
4. Observe the flash-off time;
5. Keep the correct distance between the part and the drying panel;
6. Wait for the solvent evaporation before using the infrared drying.

Sand or strip (scrap) the affected areas up to the intact layers. Prepare the surface and repaint it properly.

SANDING MARKS

Visible grooves on the film after finishing application.



1. Use of inadequate sandpaper (too coarse);
2. Presence of dust when sanding;
3. Incorrect drying time;
4. Insufficient number of primer or finishing coats;
5. Improper finishing between the sanding of the polyester / plastic body filler and the primer application.

1. Use the recommended sanding grit size.
2. Wait for the product to complete dry before sanding;
3. Apply the products in the thicknesses recommended in the Data Sheet.

After the product has completely dried, sand the topcoat with proper sandpaper and reapply the finishing. If necessary, do the same procedure with the primer layers.

WRINKLING / LIFTING

Surface with wave-type formation and wrinkles in the paint.



1. Incompatibility between systems;
2. Previous coat not adhered to the substrate;
3. Excessive layers of the primer or body filler;
4. Insufficient drying of the previous coats;
5. Overly viscous paint;
6. Retention of the previous film diluent.

1. Use compatible systems;
2. Apply the products in the thicknesses recommended on the Data Sheet;
3. Use the recommended diluent;
4. Make sure the layers are properly dry;
5. Observe the flash-off time;
6. Applying a sealer primer can isolate the layers if the removal is not possible.

Strip (scrap) the affected parts. Prepare the surface and repaint it properly.

DEFECT

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PINHOLES (PORES)

The painting surface presents small holes or craters.



1. Improper mixture of components;
2. Improper application of the polyester body filler;
3. Pot life expired;
4. Entrapped air in the primer;
5. Holes not covered by the previous coat;
6. Entrapped air due to wrong opening of the nozzle;
7. Overly viscous paint;
8. Insufficient time for evaporation between coats (flash-off not observed);
9. Diluent/solvent retention under the film.

1. Mix using a ruler or a paint mixing cup;
2. Observe the pot life;
3. Use the spray gun nozzle opening according to the product Data Sheet. For primers, 1.8 to 2.0 nozzles are recommended;
4. Observe the evaporation time in all the coats of the system;
5. Use the thinners and catalysts recommended on the Data Sheet according to the weather conditions.

Thoroughly sand the affected area and reapply the coat.

OVERSPRAY

Structural defect of the film due to dry spraying.



1. Diluent with overly fast evaporation rate;
2. Excessive dilution;
3. Improper spray gun type;
4. Too much distance between the spray gun and the painted surface;
5. Inappropriate catalyst for the weather conditions;
6. Paint clouding from paintworks nearby;
7. Use of diluent not recommended (e.g., thinner).

1. Correctly choose the diluent and/or catalyst according to the temperature condition and the surface size;
2. Correctly mix the components using a ruler or a paint mixing cup;
3. Isolate workstations.

Perform the polishing. If this is not enough, sand the area and reapply the paint.

ORANGE PEEL

The surface is not smooth; its texture resembles an orange peel.



1. Ambient temperature too high;
2. Overly viscous paint;
3. Improper spray gun type, lack of air pressure or paint flow too open;
4. Distance between the spray gun and the surface too short;
5. Paint coat applied out of specification;
6. Catalyst or diluent improper for the temperature.

1. Correctly choose the diluent and/or catalyst according to the temperature condition;
2. Correctly mix the components using a ruler or a paint mixing cup;
3. Apply the paint at the recommended distance;
4. Adjust the viscosity as indicated;
5. For paint and varnish application, it is recommended a 1.3 to 1.5 spray gun. The more diluted the product, the smaller the orange peel effect. Note: follow the dilution limits recommended by the manufacturer.

In simple cases, after the paint dries, sand it and polish it.

In severe cases, sand it until obtaining a smooth surface and repaint it.

DEFECT

POSSIBLE CAUSES

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RUN

Defect occurred during the paint application in form of waves or drops.



1. Improper spray gun type;
2. Incorrect adjustment of the air pressure;
3. Paint flow too open;
4. Application speed too slow;
5. Short distance between the spray gun and the surface to be painted;
6. Excessive dilution;
7. Excessive film thickness;
8. Ambient temperature too low;
9. Use of improper catalyst and/or thinner for low temperature;
10. Interval between coats too short.

1. Use proper spray gun in perfect conditions. 1.3 - 1.5 spray gun is recommended to apply paint and varnish;
2. Correctly adjust the spray gun;
3. Observe the recommendations according to the temperature variation.

Wait for the complete drying.

Sand the affected parts.

Prepare the surface and repaint it properly.

WATER MARKING

The painting has whitish circular spots.



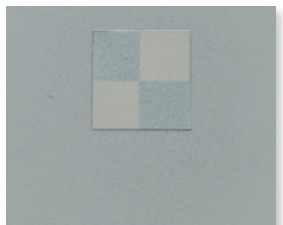
1. Water accumulation over freshly painted surface;
2. Use of improper catalyst and/or thinner;
3. Exposure of the painting to the weather, without being completely dry;
4. Humidity retention when using a water sandpaper system, mainly when sanding the body filler (polyester or plastic).

1. Observe the recommended drying, as well as the thickness of the paints and the mixing ratios (catalysis).

Polish or remove (in the most severe cases) the coats presenting the problem and repaint it.

COVERING FAILURE

Substrate showing through the paint coat.



1. Improper primer color;
2. Paint with low coverage capacity;
3. Color with low-opacity pigments;
4. Excessive dilution;
5. Inappropriate homogenization;
6. Paint thickness below the Data Sheet specification;
7. Observe the flash-off time.

1. Use a primer with a shade as close and possible to the subsequent coat;
2. Use a tinting primer in the appropriate color;
3. Thoroughly homogenize the paint before application;
4. Dilute it as indicated in the product Data Sheet;
5. Apply enough coats to obtain the layer indicated on the Data Sheet;
6. Apply the paint in a place with adequate lighting;
7. Observe the flash-off time.

Wait for the complete drying.

Sand the surface and repaint it with finish coating only, without reapplying the primer.

WEG Automotive Refinish

Those who know about cars recommend it.

Supplying full solutions in coatings is in WEG's DNA. We add high technology to our manufacturing processes in order to develop products that meet the specifications and requirements of the automotive refinish markets in the global market.

Our products are extensively tested to ensure the satisfaction of our customers. We offer body fillers, primers, basecoats, clears and complements used from the preparation to the finish of the automotive repair system, providing convenient handling, easy application, high productivity and great resistance.

WEG Coatings is present worldwide in a partnership with several retailers and dealers, providing full protection in the Automotive Refinish, Industrial Coatings and Industrial Maintenance lines.

Product Line

TINTING SYSTEMS

- W-MIX POLYESTER
- W-MIX LACA SL
- W-MIX SINTETIC SS
- W-MIX PU SD
- W-MIX PU SDP

FACTORY PACK

- W-Car Urethane
- W-Car Polyester
- W-Car Nitrocellulose Lacquer
- W-Car Sintetic
- Clearcoats

PREPARATION

- Primers
- Sealers
- Body Fillers
- Accelerators

POLISHING

- Polishing Compound

COMPLEMENTS AND DILUENTS



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The values are subject to change without prior notice. The information contained is reference values.