

Matthews Paint Troubleshooting Guide

This guide provides frequently asked questions with answers and a list of common problems, what causes the problem, and a general list of corrective actions.



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FAQs—Frequently Asked Questions

What is the coldest temp I can spray Matthews paint at?

Inside and outside: 60-65 degrees minimum. Substrate and paint should also be at these minimum temperatures.

What will happen if I do spray below 55 degrees?

Product won't crosslink.

Do I need a respirator?

Yes! Yes! Yes! Supplied Air is recommended for everything.

Can Matthews paint be sprayed in a mall while people are present?

Not recommended to spray due to vapors.

Can you screen print with MAP?

Not recommended. MAP isn't designed to be screen applied.

What Matthews primers can I put on top of Matthews paint?

- Epoxy primers
- U-Prime
- No wash primers or Polyester Primer

Can you put MAP over screen print coatings?

- Most silk screen materials are enamels, and Matthews may lift enamels.
- Epoxy and urethane screen prints can be topcoated or cleared with Matthews.

Can you put MAP over sign foam?

- SignFoam™—Yes, with Polyester Primer, U-Prime or Epoxy.
- Styrofoam—No, it will dissolve foam.

Can you apply Matthews over existing coatings?

In many cases you can, but each instance should be tested first.

What primer is recommended for wood?

- Results may vary since there are many kinds of wood and wood products.
- Basically wood needs to be moisture-free. Wood MUST be dried or kiln-dried to avoid blistering.
- The best primer would be epoxy.
- As always, testing is recommended prior to application.

Can concrete be painted with Matthews paint?

The porosity of the concrete will determine number of coats of epoxy to apply. Concrete should be properly cleaned to remove form release agents. Muriatic acid is best choice for cleaning / etching. Testing is always recommended.

How do I get rid of the white spots when I use flattening paste?

- Stir, shake, and strain
- Verify proper order of addition of ingredients

How can we get Satin MAP to dry more evenly?

- This can be challenging especially over large, dark, flat surfaces
- Check equipment setup (1.3-1.5)
- Try using slower reducer and adding a retarder to the reducer mix
- Two medium wet coats with second coat applied as a cross coat

How can I raise the gloss level of MAP Gloss?

- Use gloss modifier or gloss clear, this will help achieve a "wetter" look



! The coldest temperature recommended to spray Matthews paint is at 60-65 degrees minimum both inside and outside.

How can I get the paint to dry faster?

- Bake it, use accelerator, increase air flow, and/or add reducer to assist flash
- Use proper mix ratios and spray techniques

What causes vinyl bubbling?

- Carbon dioxide from the curing process is trapped by vinyl
- Allow product to outgas by following proper cure times before applying vinyl
- Force dry before application



Metallic paints present the greatest application challenge. What can I do?

- Proper technique, equipment setups, film builds
- Single stage metallic is always tough, needs to be babied on in light coats
- Gain experience in spraying metallics
- Basecoat/Clearcoat in place of single stage

What are recommendations when paint dries too fast?

- If due to environment—use slower solvent and/or catalyst
- Otherwise apply wetter, thicker film build

What causes paint to bubble, alligator, blister or lift?

- Incompatible substrate or undercoat
- Improper catalyzation or improper use of accelerators
- Topcoated outside cure window
- Overbaked or baked without purge/flash time

What causes paint to chalk?

- Exposure to sun and elements
- Under-catalyzation
- Too thin of film build

How long after I paint can I wrap and ship?

- Depends on sign size, composition/construction, and ambient conditions
- Best to determine your own window onsite

What is the difference between dry and cure times?

- Dry means out of dust
- Cure means through dry

What happens if I do not put in the proper catalyst?

- Crosslinking doesn't occur or occurs partially
- Poor performance will result, lack of long term durability

What causes orange peeling?

- Improper reduction (too little)
- Improper air pressure (too much or too little)
- Improper equipment setup (too much fluid, not enough atomization)
- Any combination of these

How many coats do I need?

- Normally two coats, regardless of number of passes
- Minimum 2 mil dry film for topcoats

The paint doesn't seem to be hiding, what do I do?

- Use hiding stickers to help determine number of coats
- Obviously add coats
- Add stronger basecoat color to get hiding first then topcoat with weaker color
- Make sure that paint is not over-reduced

! You can get the paint to dry faster by baking it, using accelerator, increasing air flow, and/or adding reducer to assist flash while using proper mix ratios and spray techniques.



! Reccoat problems occur when trying to apply additional paint to a freshly painted surface when the original paint film is in its crosslink “window”. Paint film will “lift” or “wrinkle” if additional coats are applied during this window.

Paint dries too fast, even with 6396SP Slow Reducer?

- Add 45-251SP retarder to reducer mix
- Use 43-999 slow catalyst in place of universal catalyst (43-270SP)

What causes blushing?

- Moisture entrapment (humidity in air gets sucked in as solvent flashes off)
- Substrates must be at proper temperatures
- Improper air flow

What are reccoat windows and reccoat problems?

- Reccoat problems occur when trying to apply additional paint to a freshly painted surface (to repair a defect or for other reasons) when the original paint film is in its crosslink “window.” That window is an amount of time in which the paint film is still very fresh but not wet, yet not dry enough to resist the solvent from additional coats of paint. Typically a paint film will “lift” or “wrinkle” if additional coats are applied during this window.
- Actual reccoat times vary according to film build, technique, application and individual product.
- Basically speaking, try to apply all of the coats of paint you intend to spray at one time following recommended flash times. If additional coats are necessary later to repair a defect, wait until the paint has dried overnight or force dry it for a comparable time.

Troubleshooting Guide

This section provides a list of common problems, what causes the problem, and a general list of corrective actions.

! Orange Peel is a film that has the physical appearance of an orange peel. This is caused when the film lacks ability to flow smoothly. Rough substrate transmits irregularities to subsequent topcoats.

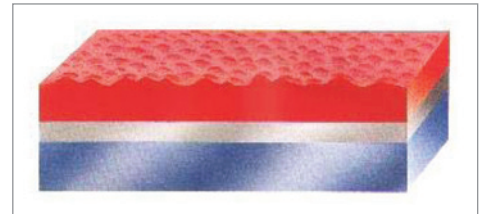
Orange Peel

Film that has the physical appearance of an orange peel.

Cause: Film lacks ability to flow smoothly. Rough substrate transmits irregularities to subsequent topcoats.

Corrective Action Checklist:

- Check if defect is on whole unit or in specific area
- Check other units on line to determine if pattern exists
- Check for low air pressure
- Check for under-reduction
- Check for proper film build
- Check for improper gun distance
- Check reducing solvent and viscosity
- Check smoothness of substrate
- Check if defect is specific to one color
- Check for excessive temperature



Dry Spray

A rough, textured surface often confined to a small area.

Cause: Paint lacks ability to flow properly.

Corrective Action Checklist:

- Check if defect is on whole unit or in specific area
- Check other units to see if a pattern exists
- Check if defect is specific to one color or many colors
- Check for proper film build
- Check for excessive air pressure
- Check for improper gun distance
- Check reducing solvent selection and spray viscosity



Color Match

Finished panels do not match color standard.

Cause: Variations in application and/or paint materials.

Corrective Action Checklist:

- Check other units on-line to determine if a pattern exists
- Check for complete hiding
- Check for variables in spray application
- Check lines and equipment for contamination from previous color
- Check for improper mixing
- Check for proper agitation
- Check gun pattern
- Check gun distance
- Check equipment setup

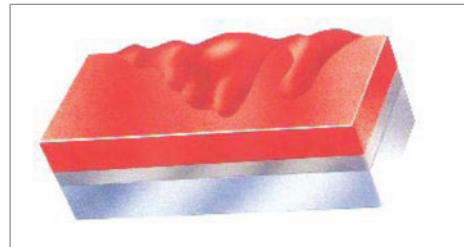
Sags or Runs

Tiers or curtains of paint on vertical or inclined areas.

Cause: Paint's inability to uniformly hold to a vertical or inclined surface, producing excessive build-up.

Corrective Action Checklist:

- Check if defect is on whole unit or in a specific area
- Check other units to determine if a pattern exists
- Check if defect is specific to one color or many colors
- Check for excessive film build
- Check for excessive fluid delivery
- Check for improper gun distance (too close)
- Check solvent selection (too slow)
- Check for insufficient air pressure
- Check for excessive application overlap
- Check for too short flash time
- Check for low spray room temperature
- Check temperature of paint
- Check temperature of unit
- Check for proper reduction



! Dry Spray is a rough, textured surface usually confined to a small area that is caused by the paint's lack of ability to flow properly.



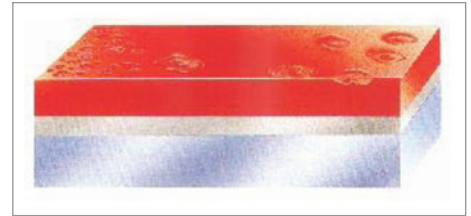
Fisheyes

Small rounded indentations that resemble fisheyes.

Cause: Foreign substances that do not blend with paint.

Corrective Action Checklist:

- Check if defect is on whole unit or in a specific area
- Check other units to see if a pattern exists
- Check for oil in air lines and spray equipment
- Check airborne contamination in spray area
- Check for possible contamination in paint materials
- Check for painter contamination, skin oils, perspiration, greasy foods, etc.
- Check for any oils or contamination that might get into paint or spray area
- Check for proper cleaning procedures prior to refinishing



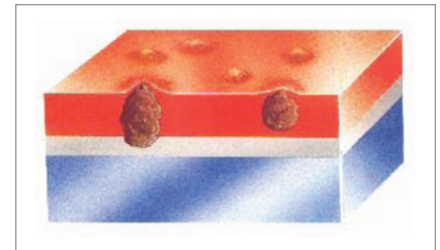
Dirt

Small bumps deposited in, on, or under the paint film.

Cause: Foreign particles entering wet paint film.

Corrective Action Checklist:

- Check if defect is on whole unit or in a specific area
- Check other units to determine if a pattern exists
- Check paint mixing / filtration process
- Check spray environment (booth)
- Check preparation process of unit, tacking, solvent wash, etc.
- Check painter's clothing
- Check spray equipment
- Check used paint filters for contamination
- Check for use of anti-static wipe or spray products



Peeling

Topcoat peels off when unmasking.

Cause: Topcoat layer or paint separating because of lack of physical bonding.

Corrective Action Checklist:

- Check if defect is on whole unit or in a specific area
- Check other units to determine if a pattern exists
- Check film build—wet and dry
- Check for contamination—oil, sanding residue, overspray, water, cleaner residue, etc. on substrate prior to topcoat application
- Check for non-sanding or primer surfacer
- Check for case hardening of substrate
- Check for poor surface preparation prior to topcoat application
- Check for masking tape contacting painted surface
- Check solvent selection (too fast)
- Check for thin sealer film builds or no sealer
- Check for incompatible products

! Fisheyes are small rounded indentations that resemble fisheyes. This is caused by foreign substances that do not blend with paint.



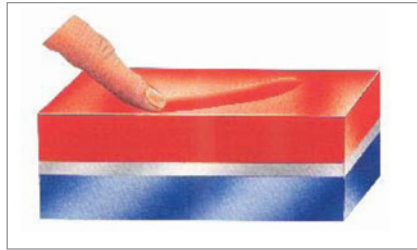
Soft Paint

Easy to mar or penetrate film with fingernail.

Cause: Insufficient cure of paint film.

Corrective Action Checklist:

- Check if defect is on whole unit or in a specific area
- Check other units to determine if a pattern exists
- Check for improper film build
- Check hardener (old, improper, or contaminated)
- Check for improper mixing ratio
- Check for improper heat during cure time
- Check for improper air flow
- Check flash or dry times
- Check solvent selection (too fast)
- Check for excessive humidity
- Check for cool temperatures



Die Back

Loss of gloss after application (if using glossy topcoat).

Cause: Improper evaporation of solvent, poor initial cure, or paint not flattened sufficiently.

Corrective Action Checklist:

- Check if defect is on whole unit or in a specific area
- Check other units to see if a pattern exists
- Check for too fast a solvent selection
- Check for cool temperature during cure
- Check for lack of airflow during cure
- Check for improper film build
- Check for improper flash times
- Check for incompatible products
- Check for proper mixing/agitation of product

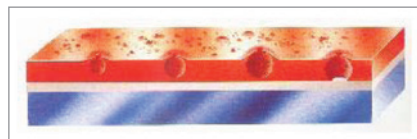
Solvent Trap (Popping)

A “goose pimple” or volcano appearance in paint film which, on close examination, frequently has small holes in the center of the bumps.

Cause: Improper evaporation of solvent from wet paint film during initial cure or force dry.

Corrective Action Checklist:

- Check to determine if defect is on entire unit or just in a specific area
- Check for high temperature in first part of force dry
- Check other units on line to determine if a pattern exists
- Check for correct reducing solvent
- Check if defect is specific to one or many colors
- Check if defect is most prevalent on horizontal surfaces
- Check for excessive film builds
- Check for high fluid delivery
- Check for low air pressure
- Check for high viscosity
- Check for too much overlapping in film build



! Die Back is the loss of gloss after application (if using glossy topcoat). It is caused from improper evaporation of solvent, poor initial cure, or paint not flattened sufficiently.



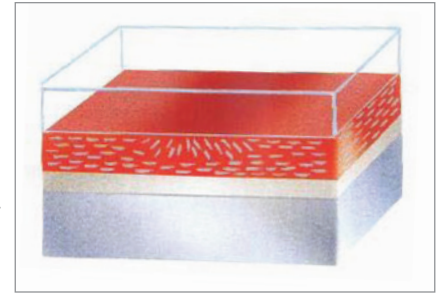
Mottling

Spotty, non-uniform, blotchy appearance of metallic paint.

Cause: Uneven distribution of metallic flakes.

Corrective Action Checklist:

- Check if defect is on whole unit or in a specific area
- Check other units to see if a pattern exists
- Check if defect is specific to one color or many
- Check for excessively high fluid delivery
- Check atomizing air pressure
- Check gun pattern
- Check gun distance
- Check equipment set-ups (fluid delivery)
- Check solvent selection
- Check reduction, viscosity
- Check flash and dry times
- Check temperature in spray environment (too cool)



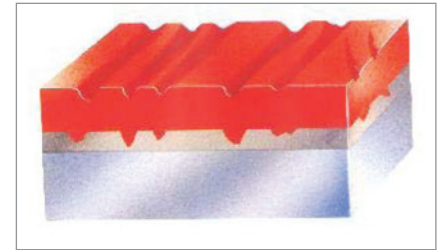
Sand Scratches & Bullseyes

Objectionable sanding pattern imperfections that show through the finished paint film.

Cause: Imperfections due to soft primer, improper sanding techniques and low topcoat film build. Excessive film builds with improper flash times.

Corrective Action Checklist:

- Check if defect is on whole unit or in a specific area
- Check other units to see if a pattern exists
- Check if defect is specific to one or many colors
- Check for correct sandpaper grit (too coarse)
- Check topcoat film thickness
- Check for proper feather edge technique
- Check for uncured primer
- Check for poor quality solvent used in undercoats
- Check flash and dry times
- Check for excessive primer film builds
- Check for proper gun technique and atomization
- Check for under-reduced primer surfacer (bridging scratches)
- Check for sanding before primer surfacer is cured



! Sand Scratches & Bullseyes are the objectionable sanding pattern imperfections that show through the finished paint film. They are caused by imperfections due to soft primer, improper sanding techniques and low topcoat film build. Excessive film builds with improper flash times.

Overspray

Paint materials from another unit falling on adjacent surfaces.

Cause: Misdirected spray droplets or dry spray.

Corrective Action Checklist:

- Check to determine if defect is on entire unit or in specific area
- Check other units to see if a pattern exists
- Check for correct booth air balance and flow
- Check for sequence of panel application
- Check gun technique
- Check if defect is specific to one color
- Check air pressure (too high)
- Check for over-reduction