

Metallic Finishes

MDC Interior Solutions Metal Works performance coating systems provide special optical effect finishes that go well beyond standard architectural paints. The application of metallic is a multi-step process requiring a well thought out procedure, good application skills, ultra-violet resistant primers, specialty application equipment, consistent air supply and an expectation of a production rate that is a fraction of the rate typically used in the application of most opaque architectural paint products. The following process description is designed to assist the commercial coatings contractor in assessing the time and costs that should be considered when estimating the application and material costs of applying metallic coatings.

Geometry of Substrate and Mock-Ups

Before the application of a metallic or iridescent coating, the geometry of the substrate and the actual ambient environmental conditions must be considered. Difficult shapes, angles and hard to reach areas that pose a problem for the applicator to keep the gun perpendicular to the surface must be assessed. A plan should be developed to work with the geometry and a field mock-up should be provided so all parties have the same level of expectation for the finish.

Primers and Base Coats

Metallic coatings are translucent, ultraviolet light will penetrate through the coating to the primer. It is essential that the primer or the base coat fully resist ultra-violet light. Metal Works is designed to resist long-term exposure to ultraviolet light. Conventional epoxies and alkyds should never be used for exterior applications under metallic and iridescent coatings unless an ultra-violet “blocking” coat is used as an intermediate coat.

The primer or the base coat should be applied over the entire substrate to achieve a consistent background color for the finish coats. The color of the primer or base coat should be selected to enhance the finish coat given that the finish coat is translucent. A gray primer is an excellent background for a silver metallic finish.

Air Supply

The constant flow of air in terms of volume and pressure is essential for the successful application of metallic and iridescent coatings. The metallic flakes (aluminum) and iridescent chips (mica) layout in the resin system dependent on the way the coating is applied to the substrate. Inadequate air volume or inconsistent air pressure will result in the misalignment of the flake pattern resulting in a splotchy appearance.

Selecting the Correct Surface Preparation and Primer for the Substrate

Surface preparation and primer vary by substrate and service. Carbon steel, aluminum, galvanized steel, stainless steel and other substrates including previously coated surfaces all have different surface preparation requirements and priming requirements

Application Equipment

Gravity Feed HVLP versus Conventional HVLP Pressure Pot

In the automotive refinish market where most manual applied metallics and iridescent coatings are used, the gravity feed HVLP gun is the choice of applicators. The advantage of the gravity feed gun is that the consistency of the metallic dispersion in the application stream helps to eliminate pigment striping that can be experienced with conventional HVLP pressure pot systems. HVLP pressure pot application can be successful, but air pressure, air flow and applicator skill are more demanding to those using a pressure pot set-up.

Fine Finish Air-Assist Airless

Good success has been noted by applicators using air assist airless fine finish equipment. This type of equipment has proven to deliver metallic and iridescent pigments to the surface in an even pattern.

HVLP Turbine (Cap) Spray - NOT RECOMMENDED

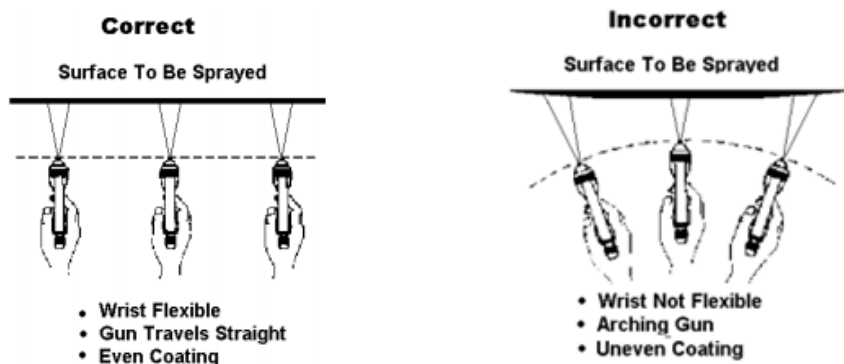
Airless - NOT RECOMMENDED

Roller application - requires special consideration

Some projects have been roller applied successfully (*Please contact your MDC sales representative or Customer Care at 847.437.4000 for recommendations*). The success of a roller application depends on the substrate and the size of the area being coated. The level of expectation for the appearance of the rolled metallic or iridescent finish should be significantly less than the comparable spray application.

The Applicator

The most important component of a successful application of a coating system is the applicator. A skilled applicator who understands the detail and precision required to successfully apply a metallic or iridescent three-dimensional coating system is more an artist than a painter. Success depends on staying in front of your work, keeping the gun perpendicular to the surface, moving into or away from the work to achieve the proper dispersion of the metallic flakes or iridescent chips in the coating film while maintaining proper orientation of the pigment.



Application of metallic and iridescent pigments is impacted by distance from the substrate. The closer the gun is to the substrate, the more the pigment will bury in the resin system resulting in a darker and sometimes a deeper appearance. The further away the gun is from the substrate the more the pigment will lie on the top of the coating resulting in a brighter appearance. The same material applied by the same applicator the same day at different distances from the substrate can substantially change the color and appearance from the same gallon of metallic coating.

Finish Coat Process

Metallic Applications

INSTRUCTIONS

Stir or shake thoroughly to ensure uniform mixture.

Reduction is not necessary. However, paint may be reduced up to 5% by volume using tap water.

APPLICATION FOR “SOLID COLORS” & “METALLIC COLORS”

Environmental Conditions: Air and surface temperature must be above 50° Fahrenheit and no more than 90° Fahrenheit. Surface temperature must be at least 5°F (3°C) above the dew point Application: Apply using 40-55 PSI at the gun for siphon and gravity feed spray guns, 10 PSI max. for HVLP spray guns. Apply 1-3 medium wet coats until desired coverage and flow is reached. Allow a 5 to 10 minute flash time between coats. Recommended film thickness is 1.0 to 3.0 mils DFT. For detailed metallic and iridescent application instructions, see Precision Metallic and Iridescent Guidance. Solid colors may also be brushed or rolled. Metallic colors are not recommended to be brushed or rolled.

SPRAY GUN SET-UP & PRESSURE

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Type	Fluid Tip	Spraying Pressure
Siphon Feed	1.4mm - 1.7mm	40-65-PSI
Gravity Feed	1.3mm - 1.4mm	40-65 PSI

DRY TIMES @ 70°F (21°C) and 50% RH

Dust Free	15 minutes
Dry to Touch	1 hour
Dry Time	24 hours
Full Cure	14 days
Recoat	Unlimited - no recoat time necessary Sanding will become necessary after 24 hours.

Tack Coat

The tack coat is a light coat that is applied to the surface to promote adhesion of successive coats. This coat covers the surface but does not fully wet out the substrate as the coating will have a light, uneven and transparent appearance.

Wet Coat One

The first wet coat is applied over the tack coat approximately 10 to 20 minutes after the application of the tack coat. This coat wets out the surface and presents an even appearance however the coating can still appear to be transparent.

Wet Coat Two

The second wet coat is usually the final coat and is applied 10 to 20 minutes following the application of the first wet coat. This coat should wet out the surface, present an even appearance and with the exception of very few colors, should provide complete coverage and hide.

CLEAN UP

Clean all tools and spray equipment immediately after use with soap and warm water. Acetone may be used as a final rinse.

LIMITATIONS

Protect installed coating from rain, freezing, and continuous high humidity until completely dry. Do not apply in freezing conditions or if rain is imminent. Do not apply if elevated levels of water vapor transmission may exist following application. At water vapor transmission levels greater than 4 perms, blistering or bubbles may occur. Do not use below grade, on horizontal surfaces or in areas of ponding water.

Refer to Material Safety Data Sheet for proper handling or products listed in this bulletin.

If there are any excessive variations in color and/or finish, this should be immediately communicated to your local MDC sales representative or MDC Customer Care at 847.437.4000 before proceeding further with installation.

The above information is intended only as a guideline; the installer has final responsibility for proper installation.

