

MITSUBA SYSTEMS INDIA PVT. LTD.

Metallic Powder Coating Special Effect Systems

Metallic powder coatings are decorative protective finishes for metal finishing applications. The multi-colored metallic powders are often applied with single application, and then it is top-coated with clear powder to enhance the finish even more.

Metallic and mica powder coatings contain metal flake or mica particulate matter that gives these coatings their special appearance. These flakes and particulars are a freestanding component. Metallic and mica powder coatings are homogeneously blended with a base color powder and are referred to as Dry-Blended powders. They are available in Epoxy, Hybrid, Urethane, and TGIC Polyester chemistries. The problems faced with dry-blended powders are with color consistency, limited penetration in recessed areas, and their limited ability to be recycled. Dry-blended powders are usually applied using a corona gun with a flat spray nozzle.

Metallic and mica powder coatings are processed by physically bonding them to the surface of the powder coating. Generally, all of the metallic or mica particles are bonded, however some may not be firmly attached and can cause various problems in the finishing process. Bonded metallic and mica powder has fewer lines than dry blended powders and are more readily recyclable. In addition, they also provide color that is more consistent after recycling and less picture frame effect, as well as a better penetration and higher transfer efficiency. Even though bonded metallic and mica powder can be reclaimed, it is always best to minimize the ration of reclaimed powder to virgin powder so that you will produce the best possible finish. Bonded powders are available in Epoxy, Hybrid, Urethane, and TGIC polyester chemistries.

Metallic powders do have some drawbacks associated with them. The first being that aluminized powder finishes do have a tendency to look weathered with time. Another drawback is loading, which is an uncontrollable loss of electrostatic high-voltage power at the tip of the spray gun and occurs because the metallic powder has created a ground path through the powder hose for the high voltage to travel. To reduce loading, a specially designed spray muzzle can be used if the amount of metal in the powder is not excessive. The use of metallic powder has been the cause of several spray booth fires. Spice powder coatings are unique blends of multiple finished powder colors, resulting in a highly aesthetic and protective coating. These multi-colored powders are available in Epoxy, Hybrid, Urethane, and TGIC Polyester chemistries. Spice powder coatings are most often used for end use applications such as casual furniture, shelving, case goods, and leisure equipment. However, spice powder coatings can be used for other items.

Spice powder coatings do pose some challenges for the applicator when compared to the use and application of smooth, solid color powders. Therefore, applicators need to

apply a consistent and even pattern to guarantee film thickness consistency and produce a quality appearance. Because of the nature of the spice powder coatings, the color and appearance may vary when the powder is reclaimed. In addition, substrate density can affect flow and appearance of the finished product.

TIPS ON HOW TO SPRAY METALLIC POWDERS –

Since metallic powder of this type is made by adding pure finely ground mica or aluminum or bronze particles, you are actually spraying a mix of both the plastic powder and the fine aluminum powder mixed with it.

With different guns the metallic particles in relation to the ground object may orient themselves differently. The orientation of the aluminum particles will determine the final finish.

1. Reduce dosing air, as low as possible to get a smooth soft flow.
2. Preferably use Dipstick or gravity cup so that fluidization air flow does not disturb particle size distribution.
3. Increase distance between gun and object to at least 8 inch or more.
4. Try with different nozzle especially soft flow nozzle.
5. Make sure that the powder coated material is put straight in an oven temperature of 200°C ---- if the oven will be at room temperature, the coating will flow at 150° and disturb the texture thus creating a smooth finish.

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