

POWDER COATING TIP SHEET

Troubleshooting film-build variation

Problem. Film-build variations show up in a number of ways. The substrate can show through the powder coating, and the powder coating can have a grainy flow. The powder coating can also have an uneven surface before curing, a wavy flow, or pinholes. These appearances vary on the surface of the work piece.

Solution. There are a variety of reasons for film-build variation. If you have an automatic system, the guns could be in the wrong position. Determine proper gun positioning empirically. Optimize the interval curve of automatic guns. In addition, check conveyor speed.

Inappropriate insulation of the basecoat can also cause film-build variation. Adjust any part hanging or gun configurations and pro-

vide additional grounding. Another cause of uneven film build is not having a continuous, even introduction of virgin powder to reclaim powder based on actual consumption. Assure the proper functioning of the recovery system, and adjust the virgin-to-reclaim ratio.

Sliding of the powder film (in an improperly fused condition) due to conveyor vibration can also create uneven film build. Inspect the conveyor and chain, and test grounding and charging. You also need to check to make sure that work pieces aren't flapping or swinging on the conveyor. If they are, test your fastening method and adjust your hanging configuration.

Uneven powder transport can also cause variations in film build. Test your powder transporting

devices for clogging due to foreign particles or plugs. Test for air pressure variations as well.

Unfavorable part geometry, such as parts with a lot of Faraday cages, can cause variation in film build. Change the part hanging configuration or the gun positioning, or use flat spray nozzles. If part geometry varies greatly, make gun adjustments to suit each part.

Another cause of film-build variation is excessive manual touch-up. Adjust your automatic guns to limit touch-up. If manual touch-up is uneven, retrain your personnel. PC

Thanks to TIGER Drylac USA, Ontario, Calif.; 909/930-9100 [www.tigerdrylac.com]

