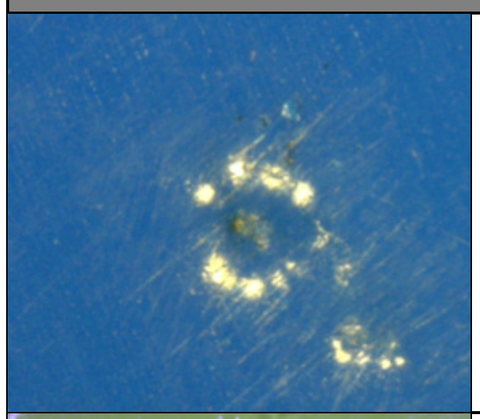
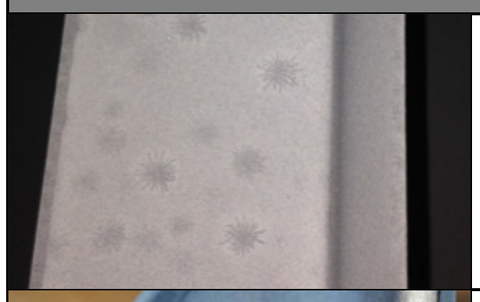
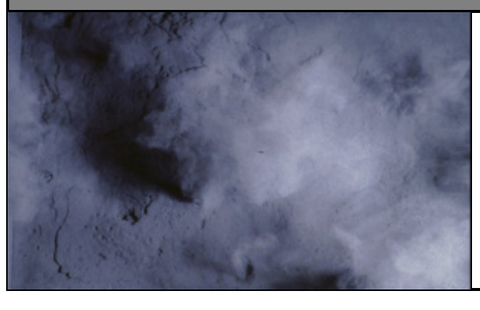
Powder Coating Troubleshooting Guide

Example	Problem	Potential Cause	Solutions
Appearance Issues			
	**Craters**	Contaminates in compressed air	*Powder coating systems should have a dedicated regenerative air dryer. Compressed air should be at 38°F dew point or lower. No particulates greater than 0.3 microns or oil greater than 0.1 ppm should be present*
		Powder material incompatibility	*Make sure the powder coating system is cleaned properly*
		Air-born or foreign material incompatibility	*Inspect area for possible contaminates such as silicone*
		Insufficient surface prep	*Check pre-treat equipment and concentrations*
	**Pin-Holing**	Contaminates in compressed air	*Check system for compressed air contaminates*
		Excessive film thickness	*Decrease film build via voltage, powder delivery, or lessen time sprayed on part*
		Excessive oven temperature	*Reduce oven temperature and/or time in oven*
		Substrate porosity	*Check the substrate for surface porosity. If substrate is sand-blasted, check recommended blast profile*
	**Poor flow or too much orange peel**	Film thickness too low (poor flow)	*Increase film thickness via voltage or higher powder delivery*
		Film thickness too high (orange peel)	*Surface overcharged back-ionization*
		Powder too fine	*Adjust virgin/reclaim ratio*
		Oven temperature too high	*Adjust temperature/time*
		Coating not cured (poor flow)	*Adjust temperature/time*
Cured Film Properties			
	**Poor adhesion**	Coating under-cured	*Run DataPaq oven profiler to confirm proper cure. The recommended time at metal temperature should be met*
		Insufficient surface prep	*Check pre-treat equipment and concentrations. Contact pretreat supplier*
		Excessive film thickness (creates brittleness)	*Decrease film build via voltage, powder delivery, or lessen time sprayed on part*
Application			
	**Powder repelling from parts (back ionization)**	Voltage too high	*Adjust voltage on controller, activate current limiting*
		Excessive film build	*Apply the powder to powder vendor's recommended film build*
		Poor ground	*Check the conveyor chain, load bars, and drop-down hooks for powder build-up. The resistance between the parts and ground must be 1 Meg-Ohm or less*
	**Insufficient powder coverage (poor penetration in Faradays)**	Voltage too low or too high	*Adjust voltage so coverage is even on edges and Faradays*
		Powder/air velocity too high	*Adjust air so the powder does not rebound from Faradays*
		Poor ground	*Make sure part ground is below 1 Meg-Ohm*
		Poor application technique or improper gun placement	*Make sure spray technique and patterns are directed properly*
		Powder too fine	*Adjust virgin/reclaim ratio*
Hoses and Pumps			
	**Pumps and hoses clogged from impact fusion**	Build-up from routine maintenance not being performed	*Clean and replace parts as needed. Start scheduled preventative maintenance*
		Moisture in air supply	*Make sure that air compressor and air drier are working properly*
		Air pressures too high	*Use lower air pressures on guns and powder transfer*
		Powder too fine	*Adjust virgin/reclaim ratio. Contact your local TCI service representative*
Fluidized Hoppers			
	**Poor fluidization**	Low air setting or improper air line size	*Adjust air to properly fluidize. Make sure air line supply is of adequate size*
		Moist or clumpy powder in hopper	*Feel bottom of hopper and make sure powder clumps are not present. If clumps are present contact powder supplier. Check air lines for moisture*
		Fluidizing plate bad	*Replace the fluidizing plate*

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