

SURFACE DEFECTS IN POWDER COATING

1.1 Craters

Possible Causes	Solution
Insufficient or faulty pretreatment (oil, grease and chemical residues) pretreatment	Test pretreatment if necessary, contact pretreatment supplier
Contamination with silicone oil	Use product without silicon content
Work piece moist/wet	Increase drying time/temperature
Contamination with other powders or materials	Check existence of improper materials and clean application equipment before changing powder type
Back ionisation effect	Check all earthing of equipments and if possible use tribo gun

1.2 Pin holes

Possible Causes	Solution
Moisture content of powder too high	Check storage conditions, keep product as specified in product label
Incompatible with other powder coatings	Clean application equipments before changing type and color of powder
Gas enclosure and escaping	Reduce coating thickness

1.3 Picture framing effect

Possible Causes	Solution
Too high voltage	Adjust voltage to work piece.
Improper distance from gun to work piece too low	Adjust distance from gun to work piece
Uneven film thickness (especially in fine textures and metallic coatings)	Adjust position of gun
Development of corrosion through moisture between powder coating and work piece	Increase the air pressure and check the humidity of pressurized air

1.4 Insufficient adhesion of powder coat to the parts

Possible Causes	Solution
Oil, water, pretreatment and chemical residues	Check surface of work piece before coating and clean carefully
Too high film thickness and flowing of coating from the edges of work piece	-Check system parameters -Reduce film thickness

1.5 Orange peel



Possible Causes	Solution
Film thickness too high/low	Check system parameters
Heat up cycle of parts too slow	Determine heat up curve and increase temperature
Too high voltage	Optimise voltage to work piece
Back ionisation effect	- Reduce voltage - Check all earthing of equipments - Increase distance from work piece to gun
Powder stored too long, causing prereacted	Check storage conditions
Incompatible with other powder coatings	Clean application equipments before changing type and color of powder

1.6 Variation in gloss and color

Possible Causes	Solution
Uneven film thickness	Reduce film thickness by adjusting application equipment
Variation in curing conditions	Optimize curing conditions of ovens
Incompatible with other powder coatings	Clean application equipments before changing type and color of powder
Oil, water, pretreatment and chemical residues	Check surface of work piece before coating and clean carefully

1.7 Greasy Surface

Possible Causes	Solution
Incompatible with other powder coatings	Clean application equipments before changing type and color of powder
Blooming effect	Change powder coating formula Increase curing temperature
Oil, water, pretreatment and chemical residues	Check surface of work piece before coating and clean carefully