

ICO  **Polymers**®

A DIVISION OF  *A. Schulman*

ICO Polymers

How to process Cotene coating powders

Jean-François Blaise

V1 22/03/2012

Mechanical pretreatment

- Target metal cleaning
 - Sa 2,5 to 3
 - SSPPC SP5
 - Nace 1 or 2
- Gritblasting
 - Make sure metal is grease/oil free
 - Profile 20 to 40 μ
 - Steel : sharp blasting media
 - Galv : non metallic grit, prebake 20 to 30°C above processing temperature
 - Aluminium : non metallic grit
 - Cast iron : prebake 20 to 30°C above processing temperature

Chemical pretreatments

- Alkaline degrease
 - Not recommended for long term corrosion protection
- Iron amorphous phosphate
 - Not recommended for long term corrosion protection
- Zn/Mn crystalline phosphates
 - Superior salt spray resistance
 - No underfilm corrosion or loss of adhesion
- Silanes nanotechnologies
 - Superior salt spray resistance
 - No underfilm corrosion or loss of adhesion
 - Can fit into iron phosphate pretreatment lines
- E-paint
 - Superior salt spray resistance
 - No underfilm corrosion or loss of adhesion
 - Make sure that e-paint is not fully crosslinked before coating

Electrostatic spraying tips

- Use clean hooks and jigs
- Set μ amps below 10
- Set voltage max 50/60 KVs
- Powder output 50% appr.
- Check earthing of system
 - 0,6 to 0,8 ohms => good
 - 0,8 to 1,6 ohms => fair
 - 1,6 ohms to 1 mega ohms => to be checked and corrected
 - More than 1 mega ohms => no conductivity
- Increase air fluidization and total air
- Distance tip of the gun to item 150 to 200 mm
- Curing stage, 150°C metal temperature minimum for 15 to 20 minutes
 - Oven temperature 180 to 200°C max
- Coating thickness minimum 150 μ
- Flock spray : make sure metal temperature is 150°C, post cure if necessary

Fluid bed tips

- Recommended surface treatment is gritblasting
- Usual metal temperature 200°C approx before dipping
- Post cure if necessary (thin wall items)
- Dipping time can be adjusted to match required coating thickness
- Touch up jiggling points with powder
- Air pressure, air flow, filter media, blower specs and advice for fluid bed design can be provided by Ico Polymers
- Jigging and handling tips can also be provided by Ico Polymers on demand
- Air or water cool after coating

Overcoating with polyester coating powders

- Cotene coating powders can be oversprayed with polyester coating powders
- This will provide
 - Increased scratch resistance
 - Infinite range of colors including matt, satin or textured finish
 - High flexibility
 - Must be applied onto melted Cotene coating at a temperature between 100 to 150°C
- Spray gun to be set on re-coat position
- Or lower pumps on spray equipment

Packaging of coated items

- Consider packing coated items when coating is back to room temperature
- Adequate packaging material must be chosen to protect coating during transport to use/erection site
- Parts should be isolated one from the other to prevent any damage
- When erecting items on site, adequate handling tools must be used to prevent any damage
- Repair procedures can be used if necessary

Basic coating repair procedures

- Light scratches
 - Use hot air gun to reheat polymer, use teflon roll if necessary to smoothen surface
- Severe scratches
 - Use repair rods supplied by Icopolymers or ...
 - Create a patch melting some powder onto a fluoropolymer coated plate
 - Apply patch on damaged area and re-heat locally or ...
 - Fill up damaged area with car body filler
 - Lightly sand area using water to give smooth finish
 - Use PU wet paint of the same color for final touch

**Questions ?
Ask us !**