



TECHNICAL C&A INFORMATION

UV Off-line Coater Problem-Solving - Anilox v1.1

Problem-Solving Guide - UV Anilox Coater

Problem	Cause	Solution
Uneven Coat-Weight Across Sheet	<ul style="list-style-type: none"> - Anilox-applicator roller setting not parallel - Applicator-impression roller setting not parallel - Chamber not parallel to anilox - Anilox cells contaminated - Irregularities in metering blade edge - Build-up on applicator roller - Build-up on impression roller - Applicator roller not consistent in diameter 	<ul style="list-style-type: none"> - Adjust anilox-applicator roller setting - Adjust applicator-impression roller setting - Adjust chamber-anilox setting - Clean anilox cells with cleaner/anilox brush - Replace chamber metering blade - Clean applicator roller - Clean impression roller, replace cleaning blade - Check/replace applicator roller if needed
Insufficient Coating Film Thickness	<ul style="list-style-type: none"> - Anilox volume too low - Anilox cells contaminated - Applicator-impression roller setting too tight - Coating viscosity too high - poor anilox release - Conveyor speed too slow - absorption into stock - High-absorption/low hold-out stock 	<ul style="list-style-type: none"> - Replace with higher volume anilox - Clean anilox cells with cleaner/anilox brush - Open applicator-impression roller setting - Use lower viscosity coating product - Increase conveyor speed, reducing absorption - Use stock with low-absorption/high hold-out
Excessive Coating Film Thickness	<ul style="list-style-type: none"> - Anilox volume too high - Chamber metering blade worn - Applicator-impression roller setting too loose - Coating viscosity too low - high anilox release 	<ul style="list-style-type: none"> - Replace with lower volume anilox - Replace metering blade - Close applicator-impression roller setting - Use higher viscosity coating product
Sheet Sticks to Applicator Roller	<ul style="list-style-type: none"> - Coating viscosity too high - Coating film thickness insufficient - Applicator-impression setting too tight - Stock basis-weight too low - Stock grain direction parallel to applicator roller 	<ul style="list-style-type: none"> - Use lower viscosity coating product - Use higher volume anilox roll - Open applicator-impression roller setting - Use heavier basis-weight stock - Feed stock with grain-direction perpendicular to applicator roller
Insufficient UV Coating Film Cure	<ul style="list-style-type: none"> - Curing System Failure - UV lamp has reached end-of-life - Reflectors damaged/contaminated - Reflectors improperly focused - Insufficient UV energy output - Improper UV output setting used - Conveyor speed too fast, insufficient UV exposure - High-absorption/low hold-out stock - UV coating cure response insufficient 	<ul style="list-style-type: none"> - Check system for proper operation - Replace UV lamp, track operational hours - Inspect and clean reflectors, replace as needed - Adjust reflectors for proper focus of UV energy - Increase UV energy output if available - Test output using UV FastCheck Test Strips - Use 300 wpi output or "high" setting - Reduce conveyor speed to increase UV exposure - Use stock with low-absorption/high hold-out - Test UV coating film cure response by using UV Cure Test Kit available from CAC

TECHNICAL C&A INFORMATION

Problem-Solving Guide - UV Anilox Coater - *continued*

Problem	Cause	Solution
Excessive UV Coating Film Cure	<ul style="list-style-type: none"> - Excessive UV energy output - Conveyor speed too slow, excessive UV exposure - UV coating cure response excessive 	<ul style="list-style-type: none"> - Decrease UV energy output if available - Test output using UV FastCheck Test Strips - Increase conveyor speed to decrease UV exposure - Test UV coating film cure response by using UV Cure Test Kit available from CAC
“Orange Peel” Surface Appearance	<ul style="list-style-type: none"> - Excessive coating application - Coating viscosity too high - Conveyor speed too fast, insufficient leveling time - Insufficient coating flow-out - Poor wetting over ink/toners 	<ul style="list-style-type: none"> - Use lower volume anilox roll - Use lower viscosity coating product - Reduce conveyor speed, increase leveling time - Mix coating thoroughly prior to use - Use infrared lamps to heat applied UV coating film to reduce viscosity and promote flow-out - Use low-wax inks - Apply wax-free primer coating prior to UV coating
“Cratering”, “Crawling”, “Pin-holing”	<ul style="list-style-type: none"> - Poor wetting over inks/toners - Excessive spray powder application - Coating not leveling uniformly - Synthetic stock surface energy is too low 	<ul style="list-style-type: none"> - Use low-wax inks - Apply wax-free primer coating prior to UV coating - Reduce powder application, use uncoated - “Powder-crush” or “dust” sheets prior to use - Mix coating thoroughly prior to use - Consult stock manufacturer
Poor UV Coating Adhesion; Flaking/Scratching	<ul style="list-style-type: none"> - Waxes in inks/toners - Printing inks not dry - Use of ink-additives that inhibit drying - Trapped ink oils or solvents - Dampening solution entrapment in ink film - Metallic ink - leafing pigments - Toner-based digital prints 	<ul style="list-style-type: none"> - Apply wax-free primer coating prior to UV coating - Allocate adequate drying time prior to UV coating - Avoid using anti-skin/stay-open sprays - Use high-solids, low-VOC inks - Use glycol-free fountain solution chemistry - Use non-leafing metallic ink pigments - Use infrared lamps to promote adhesion
Low Gloss	<ul style="list-style-type: none"> - Insufficient coating application/film thickness - Insufficient coating leveling/flow-out - High-absorption/low hold-out stock - “Gloss-back”; coating absorbs into beneath ink - Excessive spray powder on the sheets - Coating not properly cured 	<ul style="list-style-type: none"> - Use higher volume anilox roll - Use lower viscosity coating product - Use infrared lamps to heat applied UV coating film to reduce viscosity and promote flow-out - Use lower viscosity coating product - Acclimate coating to room temperature - Mix coating thoroughly prior to use - Use low-absorption/high hold-out stock - Allocate adequate drying time prior to UV coating - Utilize UCR(Under-Color Removal) - Improve drying capabilities for printing inks - Apply wax-free primer coating prior to UV coating - Reduce spray powder application - “Powder-crush” or “dust” sheets prior to use - Test UV coating film cure response by using UV Cure Test Kit available from CAC

TECHNICAL C&A INFORMATION

Problem-Solving Guide - UV Anilox Coater - *continued*

Problem	Cause	Solution
Poor Abrasion/Rub Resistance	<ul style="list-style-type: none"> - Wax in inks/toners - Wax in primer coating - Metallic ink - leafing pigments - Coating film thickness insufficient - High-absorption/low hold-out stock - Insufficient UV coating film cure - UV coating film lacks sufficient slip agent 	<ul style="list-style-type: none"> - Use wax-free inks - Use wax-free primer coating - Use non-leafing metallic ink pigments - Use higher volume anilox roll - Use lower viscosity coating product - Use low-absorption/high hold-out stock - Test UV coating film cure response by using UV Cure Test Kit available from CAC - Mix coating thoroughly prior to use
Slip - COF/AOS Measurements Low or High	<ul style="list-style-type: none"> - Insufficient UV coating film cure - Excessive UV coating film cure - Coat-weight/film thickness varies - Printing inks not dry - High-absorption/low hold-out stock - UV coating film lacks sufficient slip agent 	<ul style="list-style-type: none"> - See "Insufficient UV Coating Film Cure" on page 1 - See "Excessive UV Coating Film Cure" on page 2 - Mechanical settings are consistent/unchanged - Coating viscosity remains consistent - Operational settings are consistent/unchanged - Allocate adequate drying time prior to UV coating - Use low absorption/high hold-out stock - Mix coating thoroughly prior to use - Use constant coating agitation during use - Use a different coating product with suitable COF/AOS characteristics
Ink Color-Shft	<ul style="list-style-type: none"> - Ink contains fugitive, non-permanent pigments 	<ul style="list-style-type: none"> - Use UV-coatable permanent/light-fast pigments
Poor UV Coating Film Flexibility, Cracking	<ul style="list-style-type: none"> - Excessive UV coating film cure - Excessive coating film thickness - Stock has poor flexibility and cracks; fiber breaks and paper-coating detaches - Poor Scoring 	<ul style="list-style-type: none"> - See "Excessive UV Coating Film Cure" on page 2 - Use lower volume anilox roll - Use higher viscosity coating product - Climatize pressroom for temperature/RH - Acclimate stock prior to use - Reduce heat being introduced into substrate; reduce infrared energy output - Clean reflectors - Replace UV lamp; excessive IR generation - Check for proper dies/scoring rules for stock thickness