NOVA
pressroom products

AQUEOUS COATING TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	RECOMMENDED SOLUTION
Drying	Improper functioning or failure of the system	Check status of infrared, air knives, and exhaust
	Capacity of the dryer is insufficient for press speed	✸ Try a faster drying coating ✸ Adjust infrared energy setting to increase load temperature ✸ Use maximum hot air movement ✸ Reduce press speed ✸ Exhaust moisture during delivery
	Coating film is too thick or heavy	✸ Apply less coating ✸ Slow the pan roll and/or reduce viscosity ✸ Increase stripe to applicator and to blanket
	Excessive relative humidity	✸ Summer air has higher relative humidity, which increases drying times. ✸ Control the pressroom climate
	Heavy ink coverage	✸ Use faster setting inks or stronger inks ✸ Dark colors exacerbate problems ✸ Increase dryer efficiency. ✸ Try a faster-drying coating ✸ Check water pick-up of ink
	High moisture content in stock	✸ Change stock to see if problem disappears ✸ Moisture content should be 5-6%
	Stock is non-porous	✸ Use faster setting inks ✸ Use high solid, low VOC inks
Backtrapping or ink buildup on coating blanket	✸ Coater comes on impression late, allowing ink to transfer to blanket at start-up. ✸ Excessive pressure between blanket and impression cylinder. ✸ Not enough coating carried to blanket ✸ Ink density too high ✸ Ink tack too low ✸ Ink water pickup too high ✸ Coating is not forming a continuous film over the ink	✸ Adjust to "kiss" impression (Reduce pressure until the coating film breaks, then increase to a solid coating film) ✸ Increase oscillator speed or run a higher viscosity ✸ Reduce pressure between applicator and blanket ✸ Reduce pressure between blanket and impression cylinder ✸ Run hits of ink ✸ Increase ink tack ✸ Check fountain solution conductivity ✸ Run as dry as possible, decrease water pickup of ink ✸ Check with ink supplier
Coating buildup on edge of sheet	Excessive pressure between applicator and coating blanket	✸ Adjust to "kiss" impression (Reduce pressure until the coating film breaks, then increase to a solid coating film) ✸ Reduce coating viscosity slightly (using H_2O)

Coating buildup on blanket outside of sheet	✸ Excessive pressure between applicator and coating blanket Packing of blanket not trimmed properly ✸ Not enough blanket packing ✸ Too much coating applied to blanket	✸ Adjust to "kiss" impression (Reduce pressure until the coating film breaks, then increase to a solid coating film) ✸ Cut packing sharply 1/4" (6mm) inside sheet ✸ Pack blanket l0% more than printing blanket ✸ Reduce pan speed ✸ Reduce coating viscosity slightly (using H_2O)
Coating buildup on tail or trailing edge of sheet	✸ Coating applicator speed faster than blanket speed ✸ Excessive pressure between blanket and impression cylinder. ✸ Excessive pressure between coating applicator and blanket ✸ Blanket packing not trimmed properly.	✸ Match the speed of the applicator to the blanket Adjust pressures for "kiss" contact ✸ Cut packing sharply 1/4" (6mm) inside sheet
Cracking or Mud Cracking – "Alligator"	Coating is drying faster than the ink.	✸ Slow down the drying of the coating by reducing hot air temperature ✸ Ink may be over emulsified ✸ Check water pickup ✸ Turn down water ✸ Increase the coating weight ✸ Turn up pan roller speed ✸ Use high-viscosity coating ✸ Set the inks faster by increasing IR settings ✸ Decrease ink density ✸ Use stronger and faster inks
	Coating maybe hard and brittle	✸ Check with coatings manufacturer ✸ Add propylene glycol to coating at a rate of 0.25% by weight. DO NOT exceed 1%
	Coating is not wetting the ink	Check with ink supplier about wax content and coating compatibility
	Low humidity in pressroom	Optimum relative humidity should be 0-60%
Pinholes, craters, crawling, mottle, or orange peel	Coating is not wetting the ink	✸ Be sure to use wax-free or coating-compatible inks. ✸ Wax should be limited to minimal amounts of polyethylene. Avoid microcrystalline waxes, PTFE (Teflon) and silicone
	Too much coating applied to sheet	✸ Reduce roller speeds ✸ Lighten pressures in metering system ✸ Reduce coating viscosity with 1:l IPA and water
Rupturing or volcanoing of coating	Solvents in ink film break through the coating film causing voids	✸ Use high solid/low VOC inks ✸ Reduce IR temperature
Coating film not even across sheet	Metering roller pressure is uneven	✸ Adjust coating rollers so that an even stripe appears end to end ✸ Check for low spots on rollers
	Pressure between applicator and blanket is uneven	✸ Adjust applicator to blanket so that an even stripe appears end to end ✸ Look for low areas or smashed blankets
	Pressure between blanket and impression cylinder is uneven	✸ Adjust pressures ✸ Clean the blanket and impression cylinder

	Dried coating	❁ Clean rollers, blankets, and impression cylinder with a aqueous coating cleaner
Blocking in the delivery	Wrong coating being used for two-sided work	❁ Check with your coatings manufacturer for available work-and-turn coating
	Too much coating applied to the sheet	❁ Reduce viscosity with 1:1 ❁ IPA/H_2O ❁ Increase pressures in metering system ❁ Increase pressures to the blanket ❁ Check viscosity
	Excessive heat, moisture and pressure	❁ Reduce pile temperature rack the loads 8-12 inches (20-30cm) ❁ Increase exhaust
	Coating is drying too slowly.	❁ Add fresh coating and check viscosity ❁ Reduce viscosity with 1:1 IPA/ H_2O ❁ Increase airflow if not at maximum volume
	Ink is over-emulsified or ink not setting in delivery	❁ Use faster setting inks ❁ Reduce water speeds ❁ Minimize slow drying alcohol substitute
	Blocking on second pass/re- softening the first side coating.	❁ Increase time before backup ❁ Wind the sheets to reduce temperature prior to backup ❁ Reduce coating film weight ❁ Reduce load temperature on second pass ❁ Rack the loads 8-12 inches (20- 30cm)
Blocking in the load during converting, finishing, storage or shipping	Ink and coating are still soft.	❁ Increase spray powder ❁ Allow work to cure/ dry 48-72 hours prior to finishing ❁ Do not store work under hot humid conditions ❁ Avoid shrink wrapping until dry ❁ Fan the sheets while in storage ❁ Check compatibility of substrate and coating
Offsetting and Picking	Too little coating applied to the sheet	❁ Apply more coating ❁ Increase pan speed ❁ Reduce pressures to blanket
	Heavy ink films are slow setting	❁ Increase setting of the ink ❁ Use stronger ink or tighter body ❁ Reduce water to prevent over emulsification
	Too little spray powder	Use enough powder to prevent adhesion
	Excessive pressure from high load	Reduce the load height or rack loads
	Coating not flowing out, leveling or drying properly.	Reduce coating viscosity with 1:1 IPA/water
Color shift or burnout	Inks contain alkaline sensitive pigments	❁ Use imitation/permanent pigments ❁ Consult with your ink manufacturer ❁ Use coating-compatible inks. ❁ Pre-press testing is recommended ❁ Set the ink and coating as fast as possible ❁ Hog and fan the sheets as soon as possible
Streaking and burnishing of satin or matte coating	Coating contains "flattening agent"	Mix coating well before using. Satin coatings will finish with fewer streaks and burnishing than matte
	Application of coating	❁ Change roller nips. Adjust to "kiss"

		✹ Change roller to smoother material ✹ Change to harder and smoother blanket ✹ Increase coating film
	Use "non-streak" coating	Check with your coatings manufacturer
Low Gloss	Coating is soaking into paper or ink.	✹ Use sheet with better holdout ✹ Use coating with better holdout ✹ Check viscosity
	Coating film is too thin	✹ Apply more coating ✹ Increase pan speed ✹ Reduce roller pressures ✹ Run high-viscosity coating ✹ Run higher solids coating
	Over-emulsified ink	✹ Reduce water speeds ✹ Use stronger inks
Foaming	Level in reservoir pan is too low	✹ Increase level in pan
	Air is being introduced into the circulating system.	✹ Check seals on pumps and lines for leaks ✹ Eliminate a "free-fall" return into the drum
	Re-circulating pump is running too fast.	Turn down the pump velocity
	Coating formulation	If using a doctor-bladed anilox, consult with your coatings manufacturer
	Coating viscosity may be too thick	Reduce viscosity with 1:1 IPA/H_2O
Stock Curl	Stock is absorbing too much water.	Check to see if moisture content of stock is 5-6%. Too low and the stock will absorb too much water
	Too much coating film	Reduce coating viscosity with 1:1 IPA/H_2O
	Too much heat	Reduce the pile temperatures
	Press distortion	Reduce the press speeds and press distortions
	Lightweight substrate 60-80lb. (89-118kg)	✹ Use stock of a higher grade or higher weight ✹ Use inks that absorb less water ✹ Use the fastest drying coatings possible
	Coating is drying too slowly.	Make sure the coating is applied to the edge of the sheet
Slinging or spitting	Coating is building up on the ends of the rollers	✹ Check that coating is at proper temperature ✹ Check the coating for proper viscosity
	Rollers flared on ends	Check and clean the ends of the roller and check roller speeds and pressure
Thickening of viscosity	Partial drum has lost water and/or alcohol and/or amine	✹Keep drums closed when not in use ✹Reduce viscosity to original specs using 1:1 IPA/water ✹Mix partial drum into fresh coating and adjust viscosity as needed
Poor blister pack adhesion	Improper substrate	✹Only use specific blister board ✹Contact your paper/board supplier
	Not enough coating film.	✹Use 1.3-1.6 wet pounds per thousand square feet (6.35-7.81g/ m^2) ✹Normal coating application is 1 wet pound per thousand square feet (.88 m^2)
	Inks contain wax	Only use wax-free inks
Poor adhesion to laminate, or foil.	Incorrect primer	✹ Use coatings that are formulated as primers ✹ Check the dyne values of film

	Waxes in ink	Use only wax-free inks
	Water trapped in inks	Reduce glycols in fountain solution
	Ink oils or solvents trapped in ink.	✹ Increase drying time before applying UV coating. 48 hours is a recommended minimum. ✹ Use low VOC, high solid inks