

Waterbased Coating – Change-Over Procedure

Scope	<ul style="list-style-type: none"> - Cross-contamination and/or dilution of waterbased coating products can have an adverse effect on coating performance as it relates to both the application process and/or dried film performance on the coated sheet. - This is particularly important when using specialty coating products or functional coating products that are formulated to achieve a specific attribute such as controlled-slip (COF) or barrier properties. - It is important that procedures are followed during the changeover process between coating products to ensure that the products remain segregated and there is no cross-contamination or dilution. - While cross-contamination/dilution may not become problematic during a single change-over, particularly when using new/full coating containers, repeated changeovers to/from a single coating container may become problematic as the container is consumed, particularly when dealing with used/partial containers that contain a small amount of coating. - Using proper change-over procedures is a proactive method of ensuring that the coating product performs to the intended specifications and does not have compromised performance.
--------------	---

Waterbased Coating – Coating Contamination Prevention

Water Source	<ul style="list-style-type: none"> - Use of a treated/conditioned water source for waterbased coating cleaning/wash-up and viscosity adjustment/dilution is always recommended in all aspects of coating use – use of RO (reverse-osmosis) or distilled water is most desirable. - Incoming water that has been treated with chlorine may be inconsistent and can provide unreliable/unpredictable long-term results when added to a waterbased coating. - Use of an untreated water source is not recommended as the long-term storage results for the coating product can become positive for discoloration, microbial growth and/or odor. - Make certain that all aspects of the water source are clean and free of microbial growth – with water treatment/conditioning systems, make certain all components are free of contamination.
Coating System	<ul style="list-style-type: none"> - Over time, the coating system can become contaminated with microbial growth which needs to be cleaned/disinfected. - If the coating circuit is contaminated, all coating/water that is circulated is at risk for becoming infected which can result in microbial growth in the source coating containers. - Circulation of hot water and good cleaning procedures can aid in preventing microbial growth.
Coating System Operation	<ul style="list-style-type: none"> - During coating use, it is important to ensure that no outside water source can contaminate and pollute the coating storage container. - It is necessary to purge all residual cleaning/wash-up water from the coating circuit prior to returning coating back to the coating storage container – the practice of purging all water until fresh coating begins to return prior to placing the return stem in the coating container can help to prevent any contamination incidents.
Coating Storage	<ul style="list-style-type: none"> - Keep the lid always sealed on the coating storage container to prevent inadvertent water addition or contamination by other pressroom chemicals and debris.

Waterbased Coating – Change-Over/Cleaning Procedure

Automated Systems	<ul style="list-style-type: none"> - Most modern presses include an automated/integrated pumping system that incorporate cleaning programs/cycles that are available for use by the Operator. - These cleaning programs along with the automated mechanics of the pumping system create a by-pass of the feed/return stems in the coating container and allow for a separate circuit of water to be pumped through the coating system for cleaning – this process keeps the water from the cleaning program segregated from the coating container by drawing from a water reservoir/supply and pumping into a waste container or drain. - Most automated systems also include a purge sequence that will ensure that no residual coating from the previous
--------------------------	---

coating container (A) is introduced into the new coating container (B) after changing the feed/return stems to container (B) – in this process, coating (B) is purged through the system and into a waste container to ensure that there is no contamination by residual coating from the previous coating container (A). Once the purge sequence is complete, coating will be pumped from and returned to the new container (B) in a normal circulation process.

- Feed/return stems should always be cleaned when transferring between coating product containers.
- Shaft/propeller of any mixing-system in the coating container should be cleaned when transferring between coating product containers.
- It is recommended that coating rollers/anilox, blanket/plate, chamber/recovery-pan (if applicable) and all coating surfaces are wiped clean with water or coating cleaner and dried when changing between coating products.
- When using an automated coating pumping system, it is important that the system Manufacturer's procedures for operation and maintenance are adhered to in order to avoid problems with the coating system.

Manual Systems

- Unlike automated/integrated coating pumping systems, manually operated/non-integrated coating pumps will require more Operator intervention during the cleaning process to ensure that no cross-contamination or dilution occurs – the following procedure should be followed when using a manually operated coating pumping system:

Draining Coating

- 1) Prepare a bucket of clean, hot water for circulation along with an empty waste bucket.
- 2) While coating is pumping, remove the feed stem from coating container (A) and allow all remaining coating in the circuit to return/drain into coating container (A) – this may also include removing a standpipe from the coating-pan at the coating unit or opening a drain on a chambered system.
- 3) Stop the coating pump.

Cleaning

- 1) Wipe the feed stem clean using a rag with water or coating cleaner.
- 2) Place the feed stem into a bucket of water.
- 3) Remove the return stem from coating container (A) and place it into the empty waste bucket.
- 4) Start the coating pump and purge all residual coating from the coating circuit into the waste bucket until the return stem begins to return clean water.
- 5) Stop the coating pump.
- 6) Remove the return stem from the waste bucket and wipe clean using a rag with water or coating cleaner.
- 7) Place the return stem into the bucket of water.
- 8) Start the coating pump to circulate water through the coating circuit for cleaning (~5 minutes) – this may also include replacing a standpipe into the coating pan at the coating unit to clean the coating rollers or closing a drain on a chambered system to clean the anilox/chamber.
- 9) Stop the coating pump.

Purging

- 1) Remove the return stem and place it into the waste bucket.
- 2) Remove the feed stem, wipe dry with a rag and place it into coating container (B).
- 3) Start the coating pump – circulate coating through the coating circuit and watch the return stem as it drains into the waste bucket. Once you are confident that all the residual water has been pumped from the coating circuit and only coating is being pumped from the return stem into the waste bucket, stop the pump. This process may also include removing a standpipe from the coating pan at the coating unit or opening a drain on a chambered system.
- 4) Remove the return stem from the waste bucket and wipe clean using a rag with water or coating cleaner.
- 5) Place the return stem into coating container (B).
- 6) Start the coating pump to circulate coating. This may also include replacing a standpipe into the coating pan at the coating unit or closing drains on a chambered system.

* Depending on the type of coating system (roller/nip vs anilox) additional steps at the coating unit including inserting/removing standpipes from the coating pan or opening/closing chamber drains may be required.

* Consult your Operating Manual for specifics on how to operate the coating unit during the cleaning process.