



TECHNICAL C&A INFORMATION

Waterbased Coating - Change-Over Procedure v1.1

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 a controlled-slip. It is important that procedures are followed during the change-over process between coating products to ensure that the products remain segregated and there is no cross-contamination or dilution of the coating products. While cross-contamination/dilution may not become problematic during a single change-over, particularly when using new/full drums, repeated change-overs to/from a single coating drum may become problematic as the drum is consumed, particularly when dealing with used/partial drums that contain a small amount of coating. Using proper change-over procedures is a pro-active method of ensuring that the coating product performs as intended and does not cause the coating product to perform outside of the formulated parameters.

Waterbased Coating Contamination Prevention

Water Source	The use of a treated/conditioned water source for waterbased coating cleaning/wash-up and viscosity dilution is always recommended in all aspects of coating use. The 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. The use of an untreated water source is not recommended as the long-term storage results for the coating product can become positive for discoloration 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	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 containers. Circulation of hot water and good cleaning procedures can aid in preventing microbial growth.
Coating System Operation	During coating use, it is important to ensure that no outside water source is able to contaminate and pollute the coating storage container. In this case, 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 will help to prevent any contamination occurrence.
Coating Storage	Keep the lid sealed on the coating storage container at all times to prevent inadvertent water addition or the contamination by other pressroom chemicals.

Change-Over Procedure with Cleaning

Automated System	Most modern presses include an automated pumping system that includes cleaning programs that are available for use by the Operator. These cleaning programs along with the mechanics of the coating circuit 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
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Change-Over Procedure with Cleaning - *continued*

Automated System (continued)

program segregated from the coating container by drawing from a water reservoir 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 of the coating container by residual coating from the previous coating container 'A'. Once the purge sequence is complete, coating will be circulated and returned to the new container 'B' in a normal process. During the cleaning process when using an automated system, the feed/return stems can remain in either container 'A' or 'B' without impacting the quality of the cleaning as closed valves will prevent coating from being pumped to/from the coating container. Prior to enabling the purge sequence, the feed/return stems need to be cleaned and placed into coating container 'B'. When using an automated coating pumping system, it is important that the Manufacturer's procedures for operation and maintenance are adhered to in order to avoid problems with the system.

After the cleaning program is complete and prior to purging coating, it is recommended that the coating rollers, blanket/plate, chamber(if applicable) and coating pan should be wiped clean with water or coating cleaner and dried. Before transferring the feed/return stems from coating container 'A' to 'B', the stems should be wiped clean of coating using a rag with water or coating cleaner.

Manual System

Unlike automated coating pumping systems, manually operated 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 manual coating pumping system:

Draining Coating

- Prepare a bucket of clean, warm water for circulation along with an empty waste bucket.
- While coating is pumping, remove the feed stem from coating container 'A' and allow all remaining coating in the circuit to return into coating container 'A'. This may also include removing a stand-pipe from the coating pan at the coating unit or opening a drain on a chambered system.
- Stop the coating pump.

Cleaning

- Wipe the feed stem clean using a rag with water or coating cleaner.
- Place the feed stem into the bucket of water.
- Remove the return stem from coating container 'A' and place into the empty waste bucket.
- 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.
- Stop the coating pump.
- Remove the return stem from the waste bucket and wipe clean using a rag with water or coating cleaner.
- Place the return stem into the bucket of water.
- Start the coating pump to circulate water through the coating circuit for cleaning for ~5 minutes. This may also include replacing a stand-pipe into the coating pan at the coating unit or closing a drain on a chambered system.
- Stop the coating pump.

Purging

- Remove the return stem and place into the waste bucket.
- Remove the feed stem, wipe dry with a rag and place into coating container 'B'.
- 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 of the residual water has been pumped

Change-Over Procedure with Cleaning - *continued*

Manual System (*continued*)

from the coating circuit and only coating is being pumped from the return stem into the waste bucket, stop the pump. This may also include removing a stand-pipe from the coating pan at the coating unit or opening a drain on a chambered system.

- Remove the return stem from the waste bucket and wipe clean using a rag with water or coating cleaner.
- Place the return stem into coating container 'B'.
- Start the coating pump to circulate coating. This may also include replacing a stand-pipe into the coating pan at the coating unit or closing drains on a chambered system.

*** Depending on the type of coating system, roller vs anilox, additional steps at the coating unit including inserting removing stand-pipes from the coating pan or opening/closing anilox drains may be required. Consult your Operating Manual for specifics on how to operate the coating unit during the cleaning process.