Tech Talk From Prisco®

Tech Talk #C12

BLOCKING OF AQUEOUS COATING

One of the most important things to remember regarding aqueous coating is that it is thermoplastic. The raw materials that make up coatings are similar to those that make up plastic. Therefore, it is a pliable material that can be softened, shaped or molded when subjected to heat and pressure. When undesired heat and pressure are present, the paper load may stick together forming a block or brick.

Aqueous coatings have been successfully applied over a wide spectrum of printing inks and substrates with a considerable variety of application equipment and techniques. It is important to understand the capabilities, as well as the limitations of all the variables that play a role in the process. It is equally important to understand what happens in post press operations and converting.

1. Avoid extremes of elevated temperatures, pressures, and humidity.

   - Excessive pile temperatures
   - Excessive pile heights
   - Excessive moisture in stock, pressroom and storage facility

2. Monitor coating weights and usage.

   - Maintain a recommended 1 wet pound per thousand square feet of stock
   - Avoid the application of multiple layers of coating
   - Monitor coating viscosity. High viscosity translates directly to high film weights
   - Pre-mix or stir the drum to ensure coating is homogenized

3. Maintain proper infrared energy levels and air temperatures on press.

   - Low temperatures will not properly set and cure the ink and coating film
   - High temperatures will not dry the coating properly and the load will block

4. Maintain good ink and water balance.

   - Avoid inks with excess water pick-up
   - Avoid weak inks that require a higher ink film thickness

5. Allow the printed material sufficient time to set and cure prior to finishing and converting. A minimum of 48 to 72 hours is recommended to sufficiently set the inks and dry the coating. This time will vary depending on the absorbency of the substrate.

   - Scoring, folding, and cutting all involve pressures that may lead to blocking
   - Hot adhesives and binding glues may have sufficient heat to re-soften the coating film

6. Avoid extremes involved in packing and transportation.

   - Cased cartons or books that are stacked too high
   - Binding, shrink-wrapping, and pallet stacking before heat has dissipated
   - Very hot shipping trailers
   - Routes taken during transportation with great variations in weather conditions

7. Know your product.

   - Gloss coatings will have a greater tendency to block
   - Two-sided coatings have higher heat resistance
   - Blocking is more likely to occur on jobs with heavy ink coverage, so take extra precautions.
   - Consult your Prisco representative for performance characteristics of specific coatings

Note: Blocking, by definition, is a phenomenon that occurs ***after*** the coating film is dry. It is the softening of the film under extremes of heat and pressure. Offsetting, by definition, is the transfer of ink from a printed sheet to the back of the sheet above. Offsetting is usually due to thin coating film weights and occurs while the coating is still wet.

As always, your local PRINTERS' SERVICE office is happy to answer your questions:

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