

## Paperboard Printing Questions

**I rinsed the printing units and cleaned and changed the ink in the fountain, why am I still having such a problem with hickeys?**

- Clean feed area and machine removing dust.
- Using a piece of clear tape or a black felt cloth check sheeter edge for contamination due to a poor cut.
- Check slit edge for contamination due to a poor slit in the same manner
- Check ink tack and adjust to standards.

**Why do you insist on tape pulls when I am having problems with “hickeys” or “voids”?**

- Hickeys and print voids are usually signs of contamination. For us to make an effective resolution to these printing problems we must identify the source of the contamination. By analyzing the contaminant we can determine if it is coating, paper fiber, or a foreign material.
- Affix the tape pulls to a clear sheet (Mylar and transparency sheets work best) and not to paper or paperboard. Submit the tape pulls and supporting documentation to GP Technical Services.

**What should I do with paper that is received during cold weather or stored in a cold warehouse?**

- When the paper is needed, transport it to the area of use, allow it to reach room temperature. The greater the temperature difference between the storage area and the area of use, the longer is the time required to allow the paper to equilibrate with the plant environment prior to use. As with other materials paper expands and contracts as the temperature changes. You may experience registration and feeding problems with paper that has not equilibrated.

**Why am I having trouble holding color on poly board?**

- Poly coated paper does not absorb water as do uncoated or clay coated materials. Make the checks listed below and call a GP Technical Representative if you continue to experience problems.
  1. Check ink for water pickup.
  2. First down colors water set to high.
  3. Confirm roller settings and stripes are set according to Machine’s SOP.

**Why do I see more offsetting on poly board?**

- PE coated paperboard has the poly surface ‘treated’ for printing and gluing. This treatment, which is achieved by passing the surface through a flame or corona discharge, allows the liquid (ink or glue) to ‘wet’ the PE surface so the ink or glue can adhere. Also, the more delicate balance between water and ink in lithographic printing can lead to offsetting problems when excessive water is used.
  1. Scotch tape test, check ink adhesion to poly to confirm treatment. Contact your GP Technical representative for details or if this test fails.
  2. Confirm coverage of coating being used.
  3. Confirm heaters, IR, UV or forced air is heating properly.
  4. Confirm exhaust vent is clear and working.

5. Confirm angle of air knife to sheet in the delivery.
6. Confirm fountain solution is correct and balanced to current SOP's.
7. Confirm first down water is not being applied in excess.
8. Contact your ink and coating representatives if you are still seeing ink offset.

#### How do the printing processes used in the folding carton industry differ?

- There are three major printing processes used in the folding carton industry: Offset Lithography, Flexography and Rotogravure. Each have different board requirements to make them work.
- Flexography uses compressible printing plates with a raised image area to transfer ink.
- Rotogravure uses an engraved cylinder that traps ink in tiny cells below the surface, which under intimate contact with the board transfers the ink.
- Offset Lithography uses a flat plate, with virtually no relief that operates under the rule that oil and water don't mix. Oily inks are applied to the image, and the non-image area is covered with a water solution, which prevents the ink from sticking to it.

#### How does Lithography work?

- Lithography is "stone printing" in Greek. Alois Senefelder of Bavaria invented the process in 1798. He made printing plates from limestone. After applying a greasy mixture (He also invented the ink types, which adhered to the image, but were repelled by the water.) to put the image on the stone, he then wet the entire surface with water.
- The inked image was transferred to the substrate by either a scraper or a wheel. The water application kept the ink from sticking to it, so the non-image area was kept clean. Only the image to be transferred accepted the ink.

#### What is Offset Printing?

- The proper term is "Offset Lithography". The lithographic printing process remained as it was for 100 years before the offset idea was incorporated. The typical lithographic pressroom had someone to apply ink and water to the limestone plate and place the sheet to be printed on the plate, and someone to apply the impression pressure using a roller.
- Occasionally, the sheet wasn't in place when the roller came down; which got ink all over the impression roller. After a time, it was noted that the image obtained on the backside of the sheet, where the impression roller contacted it was better defined than the direct contact with the plate. Some ingenious pressman decided that by "offsetting" the image to a rubber roller first before contacting the substrate, a better product was obtained. That's what's done today.

