

## **SBS Conversion Questions**

### **Paper is sticking on the edges, what should I do?**

- Check the roll for signs of water damage or edge damage. Light brown, yellow or gray stains on the roll edge may indicate water damage. If the roll was severely wet, there will usually be gaps between the plies that are formed as the paper dries.
- Look for edge damage caused when sliding/dragging roll on the floor or other signs of improper handling.

### **The board has minute cracks, checking or ‘alligator hide’ showing up, at small intervals across the web.**

- Checking, as it is usually called, is when excessive force disrupts the surface of the sheet. It results when the web goes over a small diameter roller, such as a decurl station, under high tension. Reducing tension or increasing the diameter of the decurl roller should eliminate this problem.
- Higher calipers, i.e. above 20 pt, are more susceptible to checking than are the lighter sheets.

### **Why does caliper vary across my roll?**

- The paper machine takes a large diameter pipe, full of fiber and water and must translate that to a uniform thickness of board about 16 feet wide and measured in the thousandths of an inch thick. The typical process capability of such a machine is plus or minus one thousandth of an inch from side to side. That means that if you order 20 point board; which is nominally 20 thousandths of an inch thick, it could typically vary from 19 to 21 thousandths of an inch. It is a constant challenge for papermakers to reduce this variation and keep it under control.

### **What causes curl in the board?**

- There are two types of curl: roll set or Machine Direction curl caused by rolling up the board hot and under tension on the paper machine. This is also called mechanical curl and is removed by decurling on the press or sheeter.
- The second type of curl is called Cross Direction curl and is caused by moisture either leaving or entering the board. On one-side coated board, the moisture exchange is mostly through the uncoated side. As the board picks up moisture, the fibers swell and the effect is a curl to the coated side. The reverse occurs when the fibers lose moisture.

### **How can I minimize CD curl?**

- CD curl or “reactivity” is seen when the moisture content of the board is significantly different than the environment it is being used in. Most board is run to a moisture content that will minimize the moisture exchange in either direction. Board stays fairly flat in RH conditions from 25-70%; above or below this, curl can occur.

- To minimize curl, always shroud sheeted loads until use. Keep the loads in the pressroom until use. On web presses, try to stage the rolls in the pressroom for several days in order to get the board to equilibrium moisture with the pressroom environment.
- Run die-cut cartons on the gluer soon after cutting to minimize moisture exchange.

#### **Why is higher caliper more difficult to get flat than lighter calipers?**

- Paperboard is wound up hot and under tension. Cellulose fibers have a tendency to stay in the configuration they are in. The thicker the board, the more pronounced this memory would be. The board closest to the core will have the worst roll set curl and will require the most decurl action.

#### **The board won't decurl, what should I do?**

- Increase the toll tension setting.
- Make sure the web is properly threaded.
- The decurl roll may be too large in diameter. Try a smaller one if available.
- Contact your supplier to discuss the problem.

#### **What causes telescoped rolls?**

- One of the most difficult issues for a papermaker to manage is the caliper profile across the width of a paper machine. If the board thickness varies by just a small amount, as the board is rewound and slit, this small difference is magnified for every ply that is put on the roll. The result is a roll that is loose on one side and tight on the other. The effect can be like using the eyepiece on a telescope.
- Another cause is winder tension variation; which typically yields a roll that is uniformly loose across the width of the roll. If the core winding is loose, it can begin to slide sideways on the unwind stand as tension is pulled in the machine direction.

#### **What causes scores to stiffen?**

- Over time, a score will stiffen up, as the fibers have residual memory. This process will typically continue until the scores are several months old, and then no more stiffening occurs. This is why older cartons don't always perform as expected.

#### **What causes gluing issues?**

- Gluing issues can be caused by excessive starch creating a strong surface surface, or by having very strong fiber bonding in the sheet, which causes the glue failure to be somewhere other than within the fiber structure.
- The coating on paperboards can sometimes cause gluing problems although gluing properties are a major consideration in coating development. Typically when they do not allow the glue to dry quickly enough (poor green tack) or when they experience a failure of the two coating layers to adhere.

**What variables should be considered for cartons that will not run on a filling line?**

- Look at the age of the cartons being filled; older cartons (six months or older) will typically have some type of compression warp that makes opening difficult. Also, the “fluff” in the carton, which facilitates easy opening, should be investigated. If the edge caliper of the carton is too low, than the ability of the carton to open easily is impaired.