

General SBS Questions

What does SBS stand for?

- SBS stands for “**S**olid **B**leached **S**ulfate”. Solid indicates that it is a white through out paperboard, usually produced on a “fourdrinier” style machine, or if multi-ply all plies are bleached.
- Bleached means that the fibers have been bleached to remove the kraft color.
- Sulfate is the process used to remove the fibers from the wood; and is also called the Kraft Process.

What is “Fourdrinier” board anyway?

- The term “fourdrinier” comes from the names of the brothers who financed the development of the first continuous papermaking machine. The machine, invented by Nicholas Louis Robert in the late 1700’s, consisted of a continuous screen or wire that allowed the fiber/water mixture to drain, leaving the fibers supported. With many modifications, this is still the basic method used in modern papermaking.
- Some paperboard, typically recycled, is produced on ‘cylinder’ machines where a screen-covered cylinder rotates in a vat of pulp fibers and water. Multiple stations in series are required to produce a heavyweight paperboard.

What is the normal “shelf life” for rolls of SBS paperboard?

- We recommend that rolls be converted within one year. Unwrapped rolls could experience outside wrap and edge yellowing from light. As the rolls age more decurling may become necessary due to roll set memory.
- Poly two side rolls should be converted within 6 months to minimize the chance for blocking and roll set memory. Also, the surface treatment, which degrades each time the surface is handled or touched, will be affected more than with recent production and this could cause printability and glueability to be compromised.

What is the definition of Basis Weight?

- Basis Weight is defined as the weight of the paper or board over a given unit area. As an example, for SBS, the standard for Basis Weight is “pounds per three thousand square feet”, abbreviated as #/3MSF. If the Basis Weight is 180, then 3000 square feet of the board will weigh 80#.

What is meant by board density and how does it affect me?

- Density is a measure of how much fiber is compacted into a given thickness of board. To calculate the density taking the basis weight (in #/3msf) and divide it by the caliper. Density primarily affects the cutting and scoring of board; with high density being more difficult to handle. Low-density board may produce “flimsy” scores.
- Higher density boards of the same type are smoother, but are also more expensive. SBS paperboard is typically less dense than paperboards of other types, but still has an excellent print surface.

What is “brightness” in SBS board?

- Brightness is a relative scale that relates a reflected light reading off of the board to a standard that is arbitrarily valued at 100%. The standard is Magnesium Oxide; which has a bluish-white cast. Brightness readings are a percentage of the standard. Therefore, 84 Brightness is considered to be 84% as bright as the standard.

- The human eye perceives a blue-white to be ‘whiter’ than a reddish, greenish or yellowish white. Brightness measures only the ‘yellowness’ and does not always correlate to how we perceive color. The CIE Whiteness Index provides a better way to distinguish between white materials than does brightness. Expect to see this term appear more in discussion of white papers and paperboards.

What is meant by the “Z” direction in board?

- In three-dimensional space, the machine direction of the board would be considered the “x” direction and the cross direction would be the “y” direction. The thickness dimension is the “z” direction. The typical testing done in this dimension measures the internal bonding strength of the fibers. Zdt, the primary test for internal board strength, measures the force required to pull the sheet apart in the “z-direction”, hence z-direction tensile, or zdt to fulfill our fondness for acronyms.

Why are there splices in some of my rolls?

- As with any process handling a continuous web, breaks occur. Splices result when we rethread the machine and begin production again.
- Occasionally, off-quality material is detected in the master reel and must be cut out at the winder.
- Also, if the roll is not at the specified diameter and more needs to be added, a splice is made.

What is a paper machine “manufacturing cycle”?

- A paper machine “cycle” is the period of time necessary to get from one specific grade, through the normal grade mix and back to the starting grade.
- As with any process, small changes are more efficient than larger ones. That is why we produce grades in groups with similar recipes starting at one end of the caliper/basis weight range moving to the other. Then we change, if necessary to another recipe and start the process again.

Is there any recycled content in my board?

- Post-manufacture rejects, from rolls that don’t meet some quality parameter and scrap, called “broke” by papermakers, from the process are the only source of recycled content in SBS board. Although this fiber is reused and represents about 20% of the fiber supplied to the paper machine, it does not meet the criteria for recycled content.

What are shives?

- Shives are non-pulped wood fragments. The pulping process requires wood chips of a certain size for penetration of the cooking chemicals. The chemicals dissolve the portion of the wood that is non-fibrous, called lignin. Occasionally, the pulping chemicals; called white liquor, do not liberate all of the fibers and a small, woody piece remains, which is called a shive.

What is paper made from?

- Paper can be made from anything that contains fibers composed of cellulose. Cotton bolls are nearly 100% cellulose and make excellent, strong paper. Cellulose has many special properties that make it ideal for papermaking, including flexible fibers that are attracted to each other, which “bonds” the fibers. This is called “hydrogen bonding”, and as the fibers get in close contact with each other, the forces hold the fibers very closely. Current paper is made from tree fibers, which are plentiful and relatively easy to extract.



What are board coatings made from?

- Board coatings are essentially like a paint that's applied and dried at high speed. The coatings enhance the appearance and printability of the board. The coatings themselves are water based and contain binders to adhere the ingredients to the surface; typically pigments for opacity, brightness and appearance. A few other components are required for processing efficiency throughout the manufacturing process.