



PAPERBOARD 101

M MANCHESTER
INDUSTRIES
A CLEARWATER PAPER COMPANY



For over 40 years, Manchester Industries has demonstrated a passion for providing solutions to our customers. We take pride in being a part of our customers' process and working with them to meet the changing and challenging needs of the printing and packaging industry.

We provide an exceptional service platform with a staff that is second to none in technical and industry knowledge. Working with our customers, we assist with inventory requirements, specifications and recommend appropriate substrate selection based on cost, quality and end-use requirements.

ALLOW US THE PRIVILEGE OF BECOMING A PART OF YOUR FAMILY.

Serving Your Printing and Packaging Needs:

- One Stop Sourcing for First Line - Mill backed paperboard and paper
- ***No "Job Lot or Seconds" worries***
- ***Custom Precision Sheeting - From a Skid to a Truckload!***
- Digital to Large Format!
- Multiple Carton packing lines
- Fourteen Precision Sheeters
- Sister facilities give us the ability to flex our schedules and provide supply chain contingency
- Slitting and Rewinding Rolls - ***Perfect for Narrow Web Applications!***
- Contract Sheeting Services
- Guillotine Trimming capability
- Press Ready Skids
- ***Quick Turnaround time! 1-3 Day Turn***
- Inventory on-site and accessible to meet both our customer's and industry requirements
- At no additional cost, we provide technical assistance supported by our Mill's technical resources and staffing.

***Call us to discuss your
Prival Label Needs!***

***Ask about our patented
Quick Change® Skid Inserts!***



Manchester has six strategic locations including a new co-venture with Pacific Paperboard Converting ensuring speed to market for the southeast including: Tennessee, Alabama, Georgia, and South Carolina

VIRGINIA

200 Orleans Street
Richmond, VA, 23231
Phone: 804-226-4250

PENNSYLVANIA

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Wilkes-Barre, PA, 18706
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MICHIGAN

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GEORGIA

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UNCOATED PAPERBOARD

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PAPERBOARD GRADES

One way to think of packaging grades is a tri-level pyramid. Generally speaking as you ascend the pyramid you attain both higher quality and higher cost.

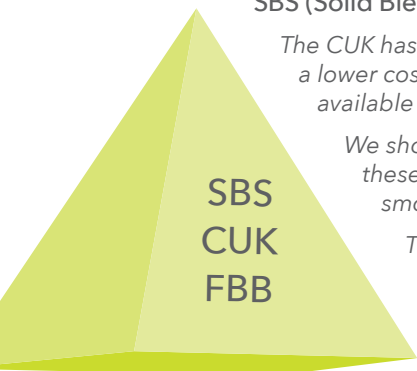
COATED VIRGIN GRADES:

SBS (Solid Bleached Sulfate), CUK (Coated Unbleached Kraft), FBB (Folding Box Board)

The CUK has a heavier basis weight than SBS for strength (wet strength sizing is also available), but historically at a lower cost per msi. SBS however offers a smoother and cleaner print surface (generally) and is more readily available and generically accepted.

We should also include the FBB grades in this family, although there are various degrees of quality within these substrates. The FBB members vary according to the type of pulp used and the degree of bleaching, smoothing and shade.

The best way to look at SBS and FBB products is to refer to them as different manufacturing technologies: SBS/CUK is manufactured using the southern kraft process, utilizing a single ply, Fourdrinier machine. FBB products are manufactured on multi-ply machines using multiple headboxes, coming together to form the sheet. Worldwide, the multi-ply machines are the most popular and utilize the newest technology.



SBS
CUK
FBB

CLAY COATED RECYCLED GRADES:

CCNB (Clay Coated News Back), CCKB (Clay Coated Kraft Back), CCWB (Clay Coated White Back)

The CCKB was traditionally used for cartons needing a little more strength than CCNB. The CCKB was to contain more kraft box cuttings (virgin fiber) to add more rigidity, bursting strength, etc. The CCWB had the white backliner to make a nicer finished (lined) carton.



CRB

UNCOATED CHIP GRADES:

Plain Chip, Bending Chip, Pasted Chip

USED FOR: Simple folding cartons, Packer boxes

Kraftpak® would be the virgin fiber member of this group, to allow a cleaner, smoother surface for printing. Some chip mills do make a recycled sheet to rival Kraftpak® in printability, but availability may be difficult in some areas of the country.



CHIP BOARD

CONTACT YOUR PAPERBOARD SOLUTIONS SPECIALIST TODAY

TO LEARN MORE

About How Manchester Industries

Can Serve Your Printing and Packaging Needs:

www.manind.com/contact



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