



SOUTHERN PACKAGING, LP

MULTI-WALL PAPER VALVE BAGS

Quick Reference Guide



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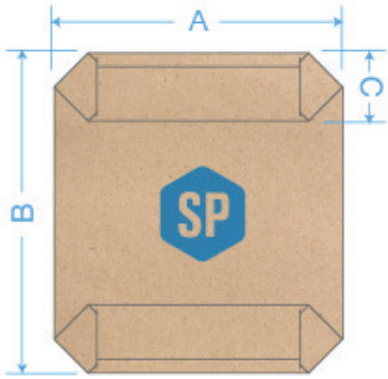
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SOUTHERN PACKAGING, LP

Pasted Valve Bags (PVSE)



Dimensions Guide:

Width (A) x Length (B) x Bottom width (C)



- Ideal for packaging building materials, chemicals, minerals, and agricultural products
- Designed for high-speed filling
- 25-100lb Capacity
- Manufactured with 1-6 plies of paper
- Multiple valve configurations for unique filling requirements
- Multiple moisture barrier options
- Flexographic printing in up to six colors
- Perforated paper for fast air evacuation
- Fully customizable for desired application

Product Information

A Pasted Valve Stepped End (“PVSE”) multi-wall paper bag, is a common industrial packaging style designed to package a wide variety of dry flowable products. Valve bags are packed on equipment that deposits material into the bag via horizontal filling spout. Valve packing equipment can range from manual, hand-spouted equipment to modern fully-automated equipment.

Valve bags are filled through an opening located in the top corner of the bag. Product is pumped or forced into the bag via air pressure, impeller, or auger. When the bag is discharged from the packing equipment, forces generated by the product inside the bag allow the valve opening to self-seal. For products requiring a hermetic seal, valve bags may be equipped with an extended sleeve capable of being ultrasonically sealed.

In general, product is aerated before it enters the bag. In order to pack properly, oftentimes the paper plies of the bag are perforated to dissipate air entrained in the product.

The valve bag construction results in a squared-up bag, which palletizes very securely and can be printed with product information on the side or end panels for easier product identification in pallet loads.



How It's Made

Step One: Printing - A flexographic press uses photopolymer plates, either digital or conventional, mounted on a printing cylinder. This process uses very fluid, fast drying solvent or water-based inks. It is especially adaptable to high speed, low cost, in-line printing.

Step Two: Tubing - The initial production of a paper bag occurs on a tuber, a machine which takes several rolls of paper and other materials and combines them over a rigid former into a flat tube bonded together with adhesives. Tuber speeds typically run from 150 to 250 feet per minute.

Step Three: Bottoming - The tubes then transition to the bottom-forming operation as required by the specification of bag they will become. The valve bag is pasted closed at both ends during manufacture with only a corner opening or valve at one end, through which the bag is filled.

Step Four: Palletizing & Drying - Finished bags travel through a metal detector to assure the absence of contaminants. Bags are then palletized and dried prior to final shipment.

Raw Materials

Kraft Paper - A paper made entirely from wood pulp produced by a modified sulphate pulping process. The paper is coarse and noted for its strength. The name is obtained from the German word "kraft" meaning strength. Its natural color is brown, but by using semi-bleached or bleached sulphate pulp it can produce lighter shades including white.

Extensible Paper - A paper made from long, slender, flexible cellulose fibers. The paper is smooth and noted for its stretch. Extensible paper is produced mechanically by compressing a paper web between a rubber blanket and drying roller. The process produces a paper with a built-in stretch, which produces greater strength and permits the reduction in the number of paper plies in a bag.

Traditional Kraft Paper	High Performance Extensible Paper
Manufactured from short wood fiber	Manufactured from long wood fiber
Heavy, coarse sheet	Smooth sheet
Strength through high basis weight	Strength through superior stretch and flexibility
Limited stretch	6-7% stretch
Low levels of porosity	High levels of porosity
Limited energy absorption	Superior energy absorption
Ideal for 3-4 ply bag construction	Ideal for 2 ply bag construction

Film Barrier - Poly sheeting, generally polyethylene, that serves as a moisture barrier in the bag. The film barrier can be buried in between the paper plies or placed against the product being packed.

Valve Types

Paper Insert - A strip of paper pasted into the valve opening to make the valve stronger and more sift-resistant. In general, this is the most economical valve type.

Double Trap - Separately applied offset pieces of paper and plastic film in the valve opening to prevent sifting.

Reinforced Poly-Lock - Polyethylene film pasted into the valve opening that provides a rigid sift resistant valve opening.

Reduced Valve - A valve tube opening that is smaller than the top and bottom width of the bag.

Tuck-In Sleeve - An outer sleeve extension that is folded and tucked in by hand after the bag has been filled. A thumb notch may be included for easier presentation on the packing equipment.

Sonic-Seal Sleeve - An outer sleeve extension on a valve bag that is coated with film for ultrasonic hermetic sealing.

Valve Location

The location of the valve is critical for proper palletizing. Valve location is determined by viewing the bag from the face [the side opposite the longitudinal seam], with printing upright. Referred to as upper right hand [URH], upper left hand [ULH], lower right hand [LRH] or lower left hand [LLH].



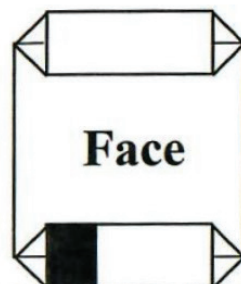
Top Right



Bottom Right



Top Left

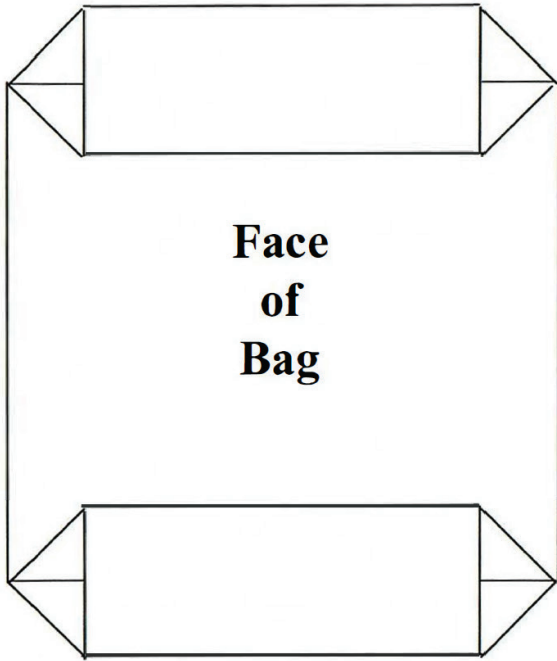


Bottom Left

Fold Direction

The fold direction is the direction in which the top and bottom of the bag is folded. The valve location doesn't not affect the fold direction. There are only two possibilities for fold direction. The top and bottom can be folded to the face or to the back (seam side).

Fold to Face



Fold to Back

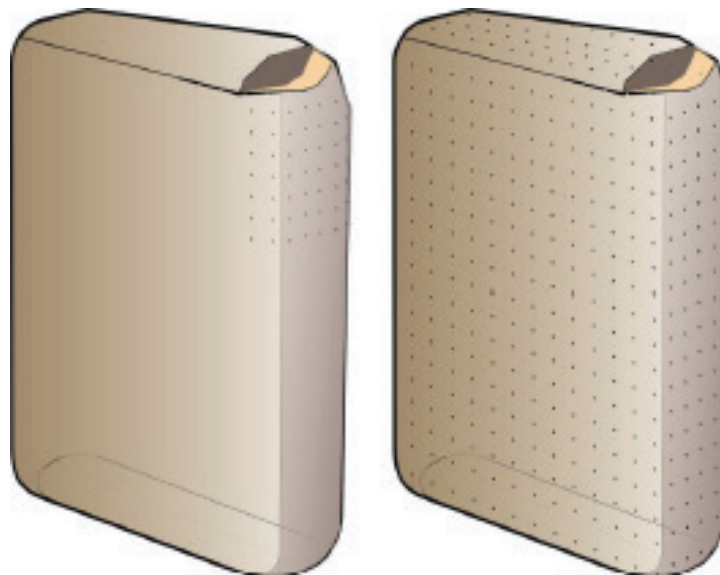


Perforation

Standard - Small vent holes punched through the walls of a bag that allow air to escape rapidly during the filling operation. Perforations may be offset between each ply to prevent product sifting or in-line to give maximum direct air release. Standard perforation sizes are 1/8", 3/32", and 1/16". Perforation patterns range from .75" X .75" centers up to 2" x 3" centers.

Nano/Micro - Needle size vent holes generally 1mm or less. The holes function in the same manner as standard perforations, however, they may be more suitable for fine products.

Undervalue - Rows of vent holes punched through all plies of the bag directly below the valve to allow air relief from the fill spout when filling. Standard patterns are 4 to 6 rows down by 6 to 8 across with 1/4" to 1/2" separation between inline punched perforation holes. Unlike overall perforations, undervalue perforations are created after all plies are positioned into the finished bag stage. They are punched through all 2, 3, or 4 plies/layers at the same time and are aligned.



Undervalue

Overall

Glossary

Anti-Skid - Coating applied to the outer surface of a bag or bag that prevents it from sliding.

Basis Weight - The weight, measured in pounds, of 500 sheets of paper in that paper's basic sheet size.

Bulk Density - The weight of a unit volume of a substance expressed as pounds per cubic foot or kilograms per cubic meter or equivalent units.

Burst Strength - The resistance of paper to rupture under pressure expressed in pounds per square inch.

Cubic Capacity - The volume of material that a bag will hold. Cubic capacity cannot accurately be determined from measurements of an empty bag, but must be determined by filling trials, taking into account entrained air in the product.

Ear - The pointed extensions which appear at the corners of bags after they are filled and closed.

Face - The front of a bag or the side opposite the side of the bag on which the longitudinal seam is located.

Flat Tube - A tube that has no gussets.

Freeboard - The distance between the top of the product and the top of the bag when the bag is placed upright.

High Performance Extensible Paper - A stretchable paper with a smooth appearance and high energy absorption properties.

Kraft Paper - A paper made entirely from wood pulp produced by a modified sulphate pulping process. The paper is coarse and noted for its strength. The name is obtained from the German word "kraft" meaning strength. Its natural color is brown, but by using semi-bleached or bleached sulphate pulp it can produce lighter shades including white. Kraft paper used for shipping bags and bags is most commonly made in basis weights from 25 to 80 lbs.

Liner - A poly film inserted in the paper plies of a bag to provide barrier protection for the product packed.

Patch - A paper patch pasted over the top and/or bottom of a pasted valve bag to prevent sifting. The patch adds strength to the bag.

Perforations - Small vent holes punched through the walls of a bag to allow air to escape from the bag rapidly during the filling operation.

Ply - A wall of a bag. A single thickness or fold of paper. Plies are described from the inside ply of the package to the outside ply.

Polyethylene - A thermoplastic material composed solely of polymers of ethylene abbreviated PE.

Porosity - The characteristic of a sheet of paper that permits the passage of air through the sheet.

Protected Glue Seam - Interior fold style on the longitudinal seam of the bag designed to prevent abrasion between the product being filled and glue seam.

PVSE - Pasted Valve Stepped End

Reduced Valve - A valve tube opening that is smaller than the top and bottom width of the bag.

Sleeve, Double Trap - Separately applied offset pieces of paper and plastic film in the valve opening to prevent sifting.

Sleeve, Poly-lock - A separately applied piece of plastic film in the valve opening to prevent sifting.

Sleeve, Tube - A separately applied piece of paper and/or plastic film in the valve opening to prevent sifting.

Sleeve, Tuck-in - An outer sleeve extension on a valve bag that is folded and tucked in by hand after the bag has been filled.

Slide Angle - The angle at which paper will start sliding when in contact with another piece of the same paper and under standard test conditions.

Stepped-End Tube - A tube in which each ply is cut individually in a stepped pattern rather than all plies cut together and straight across. Successive plies extend, one beyond the other, so that when the bag is pasted shut, each ply is pasted to itself.

Trapping - A term originally used as a measure of how well one ink printed on top of another. Trapping involves creating overlaps (spreads) or underlaps (chokes) of objects during the print production process to eliminate misregistration on the press.

Tubing - The forming of continuous webs of paper into a cylinder on a bag-making machine and then cutting to length to produce a tube for a given bag size.

Valve - An opening folded into a corner of a bag through which the bag is filled.

Valve Insert - A strip of material pasted into the valve opening to make the valve stronger and more sift-resistant.

Valve Position - The identification of location of the valve when facing the front of the bag, the face opposite the longitudinal seam, when the printing is upright. Referred to as upper left hand (ULH), upper right hand (URH), lower left hand (LLH) or lower right hand (LRH).

Valve Size - The internal, lay flat, dimension of the opening in the corner of a valve bag.