WALLCOVERING BACKINGS

HISTORY

The first vinyl wallcoverings that were adapted for use on walls were upholstery materals. These were quickly found to be dimensionally unstable. The vinyl film component was very flexible, and the knit backing was easily stretched in various directions. This created a very difficult installation. The installer easily could stretch the material. Since it had a memory, it would go back to its original shape, leaving gaps at ceiling, floor, or seams.

Wallcoverings were redesigned using a less flexible film and an "osnaburg" woven fabric backing. The term "osnaburg" is derived from the German city of Osnaburg. It originally identified a plain, coarse fabric woven from flax and tow. Later cotton wastes were used.

The introduction of synthetic fibers allowed weight reductions and lower costs for the fabrics. Today, in the commercial wallcovering industry, osnaburg describes any woven fabric which, when used as a backing for vinyl wallcoverings, meets the Type II requirements of CCC-W-408A.

ATTRIBUTES OF A WALLCOVERING BACKING

Strength – Must provide the strength required to meet the industry requirements for the specific weight selected. It must allow for easy handling and smooth application to the wall surface.

Dimensional Stability – The manufacturing of vinyl wallcoverings requires high temperatures. A fabric must be able to withstand them without large changes in dimension. At the point of installation, the fabric backing must resist stretching.

Absorbency – The fabric needs good absorbency to retain the adhesive, and to provide an excellent bond between the vinyl wallcovering film and the wall surface.

Cost – Ongoing, cooperative research is conducted by wallcovering and textile manufacturers to develop the best backings at reasonable costs.

COTTON VS. POLYESTER VS. POLYESTER/COTTON BLENDS

The original wallcovering fabrics were 100% cotton and performed very well as backing for wallcoverings. Their primary drawback was the heavy weight needed to achieve the strengths required in the specifications. This resulted in a very expensive fabric. The introduction of polyester fiber provided textile manufacturers an opportunity to evaluate new products for the wallcovering industry. They found that polyester fiber brought some benefits as well as some negative features. To achieve the optimum characteristics for a wallcovering backing, a blend of polyester and cotton was developed.

CURRENT BACKINGS

The following chart lists the backings currently used for wallcoverings. Two different variations of sheeting (or scrim) for Type I and osnasburg for Type II are used to archive the physical properties for the final product. Products that have light embosses and/or matched patterns are produced using backings that are blends of Polyester and Cotton. Products this deeper embosses are random matches are produced using backings that have 80/20 blends. The ability to go as high as 80% polyester, while maintaining the attributes of a good backing, was accomplished by using a texturized filling yarn for absorbency. Therefore, good installation characteristics are retained. When the pattern match becomes very critical or the pattern is subject to distortion,

Type I or Type II non-woven backings are used to insure that the pattern will stay in alignment. These backings are engineered blends of cellulose, polyester fiber, and polymetric binder, which are very stable due their high cellulose content. The heavier weight and strength requirements for Type III products dictate the use of a heavier weight drill backing. Drill is a fabric having a diagonal 2x1 weave.

Type I:	1.1 oz/yd2 80/20 Poly/Cotton Blend
	1.2 oz/yd2 30/70 Poly/Cotton Blend
	1.8 oz/yd2 Poly/Cellulose Non-Woven
Type II:	1.8 oz/yd2 80/20 Poly/Cotton Blend
	2.0 oz/yd2 65/35 Poly/Cotton Blend
	2.5 oz/yd2 Poly/Cellulose Non-Woven
Type III:	3.9 oz/yd2 65/35 Poly/Cotton Drill

COMPARISON OF POLY/COTTON BLEND VS. POLYESTER

	100% Polyester	Polyester/Cotton Blend
Strength:	Highest Values	Exceeds Spec. Requirements
Dimensional Stability:	Poor	Good
Absorbency:	Poor	Good
Bond to Wall:	Poor	Good
Seams:	Lack of bond can result in increased seam lifting	Good
Corner Fit:	More difficult to get good laydown and fit at corners	Good

The chart above gives a clear indication of why the fabric backing of choice is the poly/cotton blend instead of 100% polyester. It offers the best balance of properties required. The added strength of 100% polyester (when tested off the wall) does not outweigh the potential negitives.