

Things You Should Know!

Candid comments on products, properties, and applications

Woven Geotextiles

Produced by interweaving yarns, usually *monofilament* or *slit film*, from two different directions. These fabrics are noted for their strengths and high modulus or low elongation.

Monofilament yarns are extruded, resemble fishing line, and are typically used to produce "filter fabrics" with high Percent Open Areas (POA). *Slit film yarns* are slit from a plastic sheet, resemble narrow ribbons, and produce fabrics with high modulus but low POAs. Their use should be restricted to separation, stabilization, and reinforcement applications.

Clogging Resistance Criteria- AOS / EOS & Permittivity??

Unfortunately, too many specifications are being written that rely on the above retention and flow characteristics as a safeguard against clogging. Although each plays a significant role, it's possible that the filtration system can still fail if Percent Open Area is not considered.¹

Percent Open Area (POA)

The area of distinct and measurable openings of a geotextile that is not occupied by filaments or yarns. Note: Some clogging is a natural occurrence of all filtration systems, and independent studies have repeatedly shown that POA is the single most important property to consider when resistance to clogging is essential. Percentages high enough to be effective can be achieved only by certain types of woven geotextiles.¹

Nonwoven Geotextiles

Produced by the interlocking and/or fusing of randomly oriented *continuous* or *staple filaments* by mechanical, thermal, or chemical means. These fabrics are felt-like and noted for their thickness and low modulus or high elongation.

Continuous filaments are continuously extruded, and needlepunching is usually the only finishing process required. *Staple filaments* are short, typically 1 to 4 inches, and usually require heat or chemical fusing for additional strengths. Nonwoven fabrics are best suited for separation and membrane protection applications only.

Modulus

This physical property is a measure of a material's resistance to elongation under load. Generally speaking, the lower the elongation the higher the modulus. *High* modulus is critical to any project requiring reinforcement and is typically found only in woven geotextiles and geogrids. Note: A fact frequently overlooked is that most woven geotextiles are designed for reinforcement, have strengths equal to or greater than the majority of geogrids, and have been used successfully in reinforcement applications since the early '70s - at a fraction of the cost!!!

Porosity

A laboratory 'calculation' of the percent of voids in the total volume of a nonwoven geotextile. Note: Porosity has been classified with *Percent Open Area* as an '*Apparent*' *Open Area Qualifier* to establish *Clogging Resistance Criteria* - this 'theory' has not yet been validated! It does not take into account any load being placed on the fabric and is not a true representation of the geotextile's porosity in the field.

¹ See "Why Percent Open Area" and "Independent Research on Fabric Clogging" included with this package