

Share Filtration Co.,Ltd.

Pingqiao Industrial Park
Tiantai, Zhejiang 317203
Phone: 86-576-8367-0111 | Fax: 86-576-8366-6668
sales@sharefilters.com | <http://www.sharecorp.cn>

Mesh materials

The two most popular mesh materials in use today are polyester and stainless steel. In the past other materials were used, among them silk, which is why so many uninformed sources still insist on referring to screenprinting as "silkscreen printing." For many years, nylon also enjoyed considerable popularity as a screen material and it can still be purchased from some sources. Its appeal is limited because it generally can't compete with the performance of polyester or steel.

As for stainless steel mesh, if you intend to print signs you probably won't be using it. This is unfortunate in some ways, because stainless steel does offer outstanding strength and stability. However, it's mostly used for printing glass, ceramics, and electronic circuit boards. In sign printing, and indeed in almost all types of screenprinting, polyester dominates. Strong, durable, and flexible it can be used for printing with almost every kind of ink on every type of substrate, including those mentioned above. When you begin stretching your own screens, you will almost certainly find yourself working with polyester mesh.

There are, of course, many different types of polyester mesh, and it's important to understand what makes them different and how those individual characteristics affect the printing process. The first major classification is thread type. Meshes can be woven using threads that are either monofilament or multifilament. Monofilament meshes are easily the most popular for general use. Monofilament threads consist of a single strand. Look at a piece monofilament fishing line for a good example of what that looks like. Multifilament threads, on the other hand, are made up of many tiny strands twisted together. Multifilament meshes are usually identified by the letters "xx" following the thread count.

Thread count and thread diameter

Another major factor that distinguishes meshes from one another is thread count (sometimes called mesh count). This is the number of threads per inch of fabric or threads per centimeter in countries using the metric system. Often this figure is printed directly on the mesh near the selvedge, the finished edge of the roll. Common thread counts range from less than 60 threads per inch (24 threads per centimeter) to over 420 (165 threads per centimeter). Not every mesh count is available from every manufacturer, but most will offer a range of thread counts. Thread count has a direct bearing on print quality. Generally, the higher a mesh's thread count the better it will be at holding finer details in prints.

Thread diameter is another key mesh measurement. It is one of the most important factors in determining the strength of the mesh as well as ink deposit. Thicker mesh threads create heavier ink deposits, helpful when printing on rough-surfaced or porous substrates. Thread diameter is measured in microns, a unit in the metric system equal to a millionth of a meter. This figure can often be found printed on the selvedge of the mesh, immediately following the thread diameter.

The two measurements are somewhat related since as thread counts go up, thread diameters tend to get smaller. Some popular mesh thread counts may be offered in two or three different versions, offering screenmakers the opportunity to choose the thread diameter that best suits their purpose. To get an idea of how the different thread diameters perform relative to one another, look in the specifications for "percentage of open area" and theoretical ink deposit.

Remember that the mesh you are ordering may be available in more than one thread diameter. Get in the habit of always specifying the thread diameter you want when ordering mesh.

Thread count and thread diameter can make a profound impact on your final print, so it is essential to record this information on every screen. Also, make sure these measurements appear on every roll and every cut off piece of mesh you intend to reuse in another screen.

Mesh color

Another major factor in mesh is color. White is the default color, but mesh may also be dyed a different color, most often yellow or orange, to help cut down on light reflected from mesh threads when the screen is exposed. Stray light reflections can undercut the positive, eroding fine lines and creating saw-toothed edges. Colored mesh tends to be found only in the higher thread counts, because these exposure problems most often become an issue in finer-detailed printing.

Weaving pattern

The final major factor to consider is the mesh's weaving pattern. The most common is a simple over-and-under weave known as Plain Weave (PW). On the other hand, Twill Weaves (TW) are created using any one of a number of more complex weaving patterns. Twills tend to be thicker and stronger than plain weaves, even though the two may have identical thread counts. According to most mesh manufacturer specs, twills also produce thicker ink deposits, but a study carried out by the SPTF (Screen Printing Technical Foundation) claims just the opposite. Twills and plain weaves perform quite differently on the press, and care should be taken to specify whether you want a plain weave or twill when ordering mesh. The one time twills should definitely be avoided is when a screen will be used to print halftones. The complex twill weaves can interact with the halftone dot patterns and cause significant moiré problems (interference patterns).