

Understanding Screen Mesh

Mesh choices are varied and complex, but by learning the key considerations, you'll ensure that you make right purchase for your shop.

Whether you use wooden, aluminum, or retensionable frames, you need a solid understanding of the seemingly bewildering number of mesh choices available to you. The key considerations to keep in mind are whether you buy from bolts or panels, and what type of mesh count and diameter is right for your jobs. For the sake of this article, we are talking exclusively about polyester mesh for use in textile applications.

Purchasing Mesh

Bulk mesh comes per yard in bolts in a range of widths such as 42-, 52-, 62-, 72- and 108-inches wide. Be sure to factor in the width of the mesh when comparing prices among suppliers. For instance, one company may charge only \$18 a yard, but the mesh might be only 42 inches wide, whereas a second company might charge \$50 per yard for mesh that's 108 inches wide.

Picking the right mesh width is a matter of looking at your screen inventory and buying the mesh that leads to the least amount of waste. You'll be sizing the mesh to match your frames, but you don't want it at exactly the same width. That's because when you cut fabric, you should not cut it at all, you should tear it along a single thread to get a truly square piece of fabric so you need some extra mesh to accommodate for this and mounting on the frame. The extra fabric amount we budget is 4 inches larger than the outer dimension of the frame.

Retensionable frame users also have the option of purchasing mesh panels. There's practically an art to putting mesh into a retensionable frame so that it doesn't rip or introduce moiré, and so that it's square. The easiest solution: Buying mesh panels that are precut, prealigned and prebowed for roller frames. As you stretch the mesh and bring it up to tension, this prebowed panel straightens.

Mesh Count

When purchasing mesh, you'll want to let the supplier know the desired mesh count — the number of threads per inch. For instance, you might need 110 mesh, meaning 110 threads per inch, or 255, meaning 255 threads per inch.

Basically, the lower the mesh count, the more ink you can put on a shirt; that's because lower mesh counts mean bigger open spaces and thicker threads. Even if you build up a tremendous amount of emulsion, the thickness of the mesh largely controls the amount of ink that can be deposited in a single pass.

Here's a quick guide to common mesh counts:

- **Mesh from about 28 to 60** is generally considered extremely coarse, making it suitable for shimmers and metallic ink, which allows relatively large pigment particles or flakes to pass through the mesh open area without clogging. It's also used for overcoats and caviar beads.

- Mesh from 83 to 140 is used for the majority of athletic work, where you want a lot of ink and opacity. The workhorse mesh selection in this area is 110. A mesh count of 140 to 200 is the medium range of mesh, with 156 probably the most commonly used in the industry.
- Mesh counts from 173 to about 195 are used for detailed printing that still requires a large ink deposit, while anything above 200 is used for fine detail and halftones.
- It's extremely rare to see anything printed on a mesh count above 355 in the textile industry.

Thread Diameter

You may want to buy mesh with the smallest possible thread diameter. That's because a smaller diameter, which is measured in microns, translates into more ink on your shirts. For example, you could buy 70 micron diameter thread for 137 fabric with an open area of 37%. However the same company has a 155 thread count with a 60 micron thread which has a 40% open area. Therefore, the 155 will theoretically deposit more ink on your substrates.

The caveat here is that lower thread diameter means the mesh is easier to break. And unless you're doing high-end work, you may not notice a significant difference in print quality using different diameters. That said, some printers may want a higher-micron mesh for its durability. This REALLY makes a difference in the 300 plus mesh counts when it comes to being user friendly. A lot of printers choose a thicker thread to prevent blowing screens and then are confused when their images lack color intensity on the garment. It's all in your choice of mesh parameters.

Further complicating matters is that the ideal diameter for your shop will differ depending on the mesh count. So, for instance, the ideal diameter for 109 fabric is different than it is for 230 fabric.

To summarize, higher thread diameter means more durability and less ink deposit; lower diameter means less durability and more ink. Ultimately, though, you'll have to try different combinations and print with them to find out what works best for your needs.