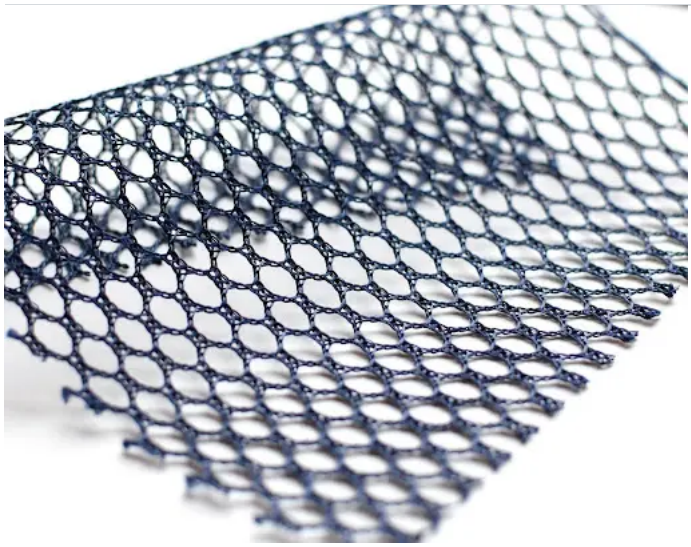
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A Complete Guide to Mesh/Netting Fabric

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Mesh fabrics, also known as netting, can be designed and manufactured in an almost unlimited variety of shapes and sizes with uniform openings, allowing for lightweight breathability and enormous versatility. One key advantage is their strength-to-weight ratio, which enables them to be remarkably lightweight yet rugged, tear-resistant, and indispensable across many industries.

Mesh fabric is not just a textile but a versatile solution to many practical needs. From personal insect protection that allows the skin to breathe to military tactical vests that reduce precious weight from a soldier's load, mesh or netting fabric serves various end uses. Understanding the properties of different fabrics and their applications ensures you can choose the suitable textile for your needs.

Properties and Quality of Mesh Fabric

Netting or mesh fabrics have an open knit pattern that creates a network of evenly spaced gaps or holes that can be fine or coarse, depending on the fabric's design—a mesh construction results in a breathable, lightweight fabric for ventilation applications. The fabric can differ in weight, thickness, color, and finish.

Mesh can be rigid, stretchy, or something in between. Polyester or nylon is often used for rigid mesh properties. We offer a combination of stretch nylons and polyesters with a balance of properties. Fabric can also be made with polyester/spandex, nylon/spandex yarns, or elastomultiester yarns for even greater stretch and recovery properties.

Increased Visibility

Along with breathability, mesh fabric can be designed and manufactured with large hole sizes that offer high visibility, making it easy to see through. The increased transparency makes this material a preferred choice for applications that include:

- Enclosure netting at sporting events
- Backpack linings and pockets
- Sport and dance apparel
- Cargo separation and protection
- Vehicle and airplane seat pockets
- Fencing for construction zones
- Fishing nets

Car seat pockets like the one above are made of mesh fabric.

Configurable Strength-to-Weight Ratios

Mesh fabric can contain different yarns with various tensile strengths to meet the application's needs. These yarns include polyester and nylon. The chosen options will impact the fabric's load-supporting ability, measured in pounds per square inch (PSI).

The flexible construction allows product engineers to adapt the mesh fabric to the strength required by the application. For example, some yarn offers high strength-to-weight ratios, making it ideal for manufacturing durable sporting goods (https://www.dupont.com/products/dupont-kevlar-fiber.html) and protective wear.

Optional mesh finishes can include:

- Antimicrobial properties
- Anti-abrasion benefits
- Fire retardant finishes
- Moisture management

Key Features of High-Quality Mesh Fabric

If you are purchasing high-quality mesh or netting fabric, look for these features:

- **Finish and treatment receptive:** With suitable finishes and/or yarns, mesh fabrics can resist water, fire, microbes, odor, and ultraviolet rays, which enhances their life span and quick-drying performance capabilities.
- **Easy maintenance:** Mesh fabrics should require low upkeep and be easy to clean.
- **Mesh size consistency:** High-quality mesh and netting fabrics have uniform-sized mesh holes across the fabric surface, delivering consistent breathability and comfort.

Types and Applications of Mesh or Netting Fabric

Various types of mesh fabrics are available. For example, mainstream options include tulle and a heavy-weight mesh suitable for military MOLLE vests. Tulle is a soft, delicate, light netting fabric made from man-made fibers (https://blog.treasurie.com/man-made-fibers/) such as polyester and nylon and is often used in wedding veils and gowns.

More durable options include mosquito netting, medical mesh, support garments/braces and spacer mesh for contract furniture and consumer goods.

Polyester Mesh Fabrics

The most commonly available mesh fabrics are made of synthetic yarn (https://www.apexmills.com/media_post/what-is-polyester/) knitted into a mesh pattern. Knitting involves interlocking the yarns together, which enhances the capabilities of the final fabric and allows it to meet stringent requirements for various industries.

Additional benefits of polyester mesh include:

- **Breathability:** The open knit structure allows for ample airflow.
- **Durability:** Polyester can be strong, and a mesh construction can add to that strength. This fabric can withstand regular wear and tear while maintaining its shape and performance.
- **Lightweight:** Polyester mesh is comfortable and lightweight, making it a preferred choice for athletic wear.
- **Moisture-wicking:** Polyester fibers draw moisture away from the body. Thanks to its synthetic nature and open structure, it is also quick-drying.
- **Low maintenance:** Polyester mesh is machine washable, retains color and resists wrinkling.

Nylon Mesh Fabrics

Nylon is a synthetic polymer with high tensile strength, excellent resistance to wear and tear, and good elastic qualities. It is made from nylon fibers derived from petroleum products. Nylon mesh is known for its strength, resilience and elasticity.

There are various types of nylon depending on their chemical synthesis, and are classified according to the number of carbon atoms per molecule:

- **Nylon 6:** Also known as polycaprolactam, nylon 6 has high tensile strength, resilience, and flexibility. Its high melting point and abrasion resistance make it ideal for automotive components, industrial fabrics, carpets, and ropes. Nylon 6 is imported.
- **Nylon 6,6:** Nylon 6,6 is made from two monomers, hexamethylenediamine and adipic acid. It has superior strength and a higher melting point than nylon 6. Nylon 6,6 has good abrasion resistance, colorfastness, and the ability to accept metallization and flame-retardant finishes. High-performance textiles, seat belts, outdoor gear, airbags and many other high-stress applications use nylon 6,6. It complies with the Berry Amendment and is often used to produce parts in demanding automotive and contract furniture industries.

You may hear the term power mesh or power net in mesh fabrics. Power mesh is a specialized fabric with superior durability, support, and elasticity. It is soft, lightweight, and has four-way stretch. The open structure offers excellent comfort, making it a good choice for shapewear and compression garments.

Specific power mesh applications include:

- Post-surgical compression garments
- Comfortable, breathable backpack straps
- Insect netting
- Military and tactical gear
- Durable, breathable commercial upholstery, such as office chairs and automotive surfaces

- Shell and linings for outerwear

The Manufacturing Process of Mesh/Netting Fabric at Apex Mills

Apex Mills offers lightweight, tear-resistant netting and mesh fabric favored by Fortune 500 companies and government agencies. Our selection includes flame-retardant nylon mesh, stretch nylon, and elastomeric fabrics. When you partner with Apex Mills, you can expect the following innovative approach:

- **In-person collaboration:** Our goal is to meet your needs. We communicate clearly to ensure we understand your needs and deliver quickly.
- **On-site development:** We develop everything on-site, taking charge of the research and development process with our in-house team. Our U.S. plant locations enable us to evaluate your design process continually, ensuring top-quality fabrics.
- **Quality control:** We follow strict quality control measures to ensure your textile meets your needs and international standards for durability, strength and mesh size.

(https://www.apexmills.com/contact-us/)

Find the Perfect Netting or Mesh Fabric with Apex Mills

Netting and mesh fabrics have multiple applications and benefits across diverse industries, including medical, military, apparel, contract furniture, and industrial sectors. Their versatility and customizable characteristics will continue to drive innovation, leading to new uses and advancements.

At Apex Mills, we are ready to take on your most challenging textile goals, backed with an ISO 9001:2015 certification (https://www.iso.org/standard/62085.html) for quality management. We work with you to develop the right solution for your needs, using an Application Driven Design (https://www.apexmills.com/media_post/problem-shared-problem-solved/) approach that results in innovative fabric formations. With expansive facilities and experienced local employees, we work around the clock to meet your textile needs. Contact us today (https://www.apexmills.com/contact-us/) for specialty fabric and textile innovation.

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