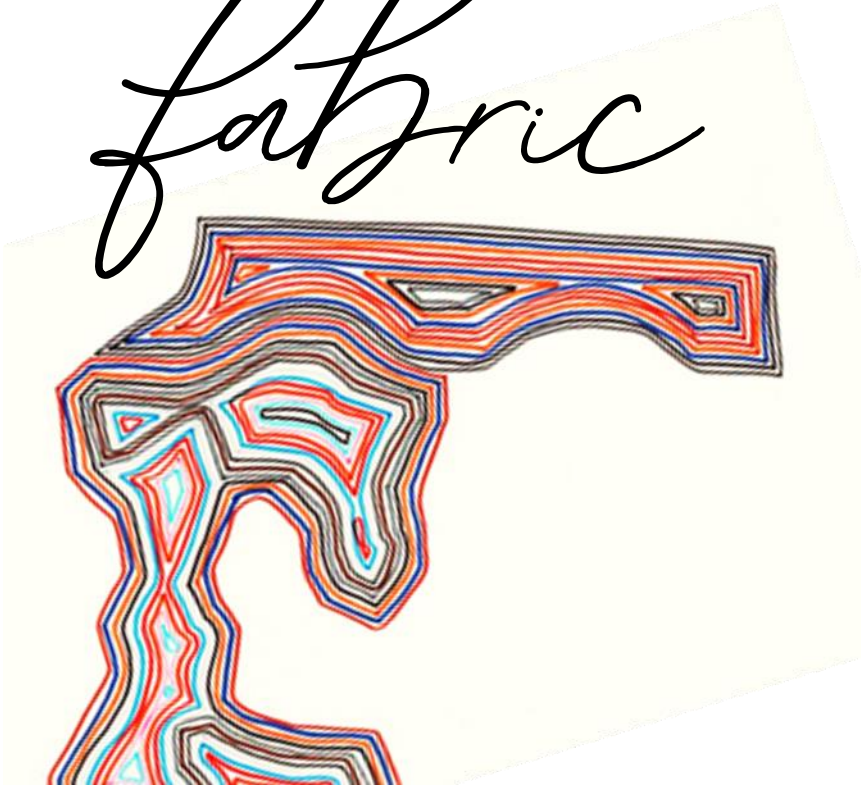
FIBERS
ARE
THE
ESSENCE
OF
fabric

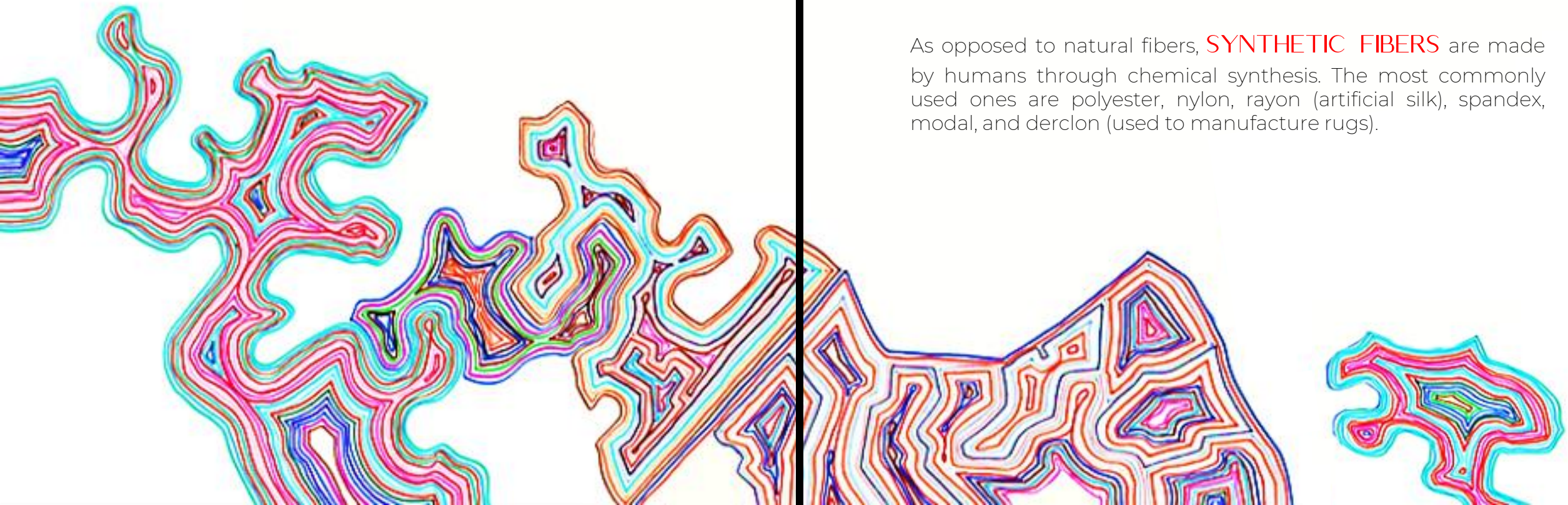


fibers

Fibers are spun into fine yarns or threads for mechanical weaving and knitting. They are available as natural, synthetic, and blended fibers.

COTTON is the most common natural fiber used to make soft, breathable, and durable textile products like terrycloth, denim, corduroy, and cotton twill. Other natural fibers include linen, bamboo, jute, hemp, maize, coir, and soy fiber.

ANIMAL FIBERS, on the other hand, are more elastic, durable, and have thermally insulating properties when compared to plant fibers. The most common animal fibers are wool (sheep), cashmere (goats), angora (rabbits), and silk (insect larvae).



As opposed to natural fibers, SYNTHETIC FIBERS are made by humans through chemical synthesis. The most commonly used ones are polyester, nylon, rayon (artificial silk), spandex, modal, and derclon (used to manufacture rugs).

Yarn

Fibers are spun into yarns for manufacturing textiles. Yarns are suitable for knitting, sewing, embroidery, and other forms of fabric assembly. One or more yarns can be twisted to create added value and aesthetics in your fabric.

The process of twisting the fibers together into yarn is called spinning. Yarns can be made from a variety of different fibers — natural, synthetic, or blended. Traditionally, they were made from fibers of fixed length called staple fibers. Today, continuous filament yarns are also used.

S-TWIST & Z-TWIST

When spinning, the yarn is composed of twisted strands of fiber. These strands are twisted together (or plied) in the opposite direction to make a thicker thread.

Whether you have an S-twist or a Z-twist depends on the direction of the twist. The threads going up and to the left form an S-twist, whereas those going up and to the right are Z-twist.

SPUN YARN & FILAMENT YARN

Made by twisting staple fibers in either an S or Z twist to make a single thread, spun yarns can have a single type of fiber or different types of fibers spun together to create a blend.

Filament yarns are made up of filament fibers which are either twisted or grouped together. They can be composed of one filament (monofilament) or multiple ones (multifilament). These can be as few as 2–3 filament fibers, up to fifty, or even more.

TYPES *of* YARNS

Yarns are classified based on the number of strands, type of filament or fiber, and intended usage. These include simple yarns, novelty or fancy yarns, embroidery yarns, and sustainable yarns.

SIMPLE YARNS

Characterized by its uniform size and regular surface, simple yarns are produced by twisting together staple or filament fibers. They can be of different types depending on the number of strands or plies. These include single (or one-ply) yarn, ply (or folded) yarn, cord yarn, and rope yarn.

NOVELTY YARNS

Typically made of two or more strands, novelty yarn is produced to provide decorative surface effects by intentionally including small lumps in the yarn structure. The uneven filaments retain their normal irregularities producing the characteristic uneven surface of the finished fabric.

Different types of simple yarns are used to create these fancy yarns like slub, flock, flake, nub, bouclé, loop, spiral, corkscrew, and chenille. These yarns give a unique texture to woven fabrics resulting in a more aesthetically pleasing product.

EMBROIDERY

yarns

Manufactured or hand-spun specifically for embroidery and other forms of needlework, embroidery yarns are available in many types depending on the usage. These include metallic yarn, crewel yarn, simple embroidery floss, variegated embroidery thread, pearl cotton yarn, cord thread, silk thread, rayon floss, and persian wool.

sustainable YARNS

ORGANICALLY grown or manufactured by recycling, sustainable yarns do not deplete the earth's resources or cause major carbon footprints. A yarn is labeled “sustainable” if it was manufactured keeping the environment, humans, and the economy in balance.

These yarns include recycled polyester yarn (made from recycled plastic bottles), organic cotton yarn, and recycled cotton.

BEAUTIFUL
THINGS
COME
TOGETHER

ONE
STITCH
AT
A
TIME

YARN DYEING

After the fiber is spun into yarn, it is dyed into various colors. It is different from another form of fabric dyeing, called piece dyeing.

In yarn dyeing, the yarn is dyed first before the fabric manufacturing or weaving stage. Whereas, in piece dyeing, the undyed yarn is first woven or knitted into a fabric (called greige fabric) and then dyed.

Dyed yarns are used for making stripe knit/woven fabrics or solid dyed yarn fabrics.

YARN MATCHING

Two or more colors of yarns are mixed and matched to bring color aesthetics in a fabric design.

Color aesthetics and combinations are easy to understand by following the color theory. A practical combination of art and science, color theory is used to determine what colors look good together.

YARN

Analogous:

Side by side on the color wheel. These are versatile and pleasing to the eye.

Complementary

Two colors on opposite sides of the color wheel. These are high-contrast and high-impact color combinations.

Tradic

A three-color variation of the complementary combination. They are used to create bold, vibrant color palettes for yarn dyeing.

Split-Complementary

Another three-color variation of the complementary color scheme. These create softer combinations.

Double-Complementary or Tetradic

Like two pairs of complementary combinations. These are great for bold, colorful designs.

the warp and weft
reveal the intricacy of
the tapestry of

textiles

WEAVING

Interlacing of yarns to produce a fabric is called weaving. The structure of the fabric is determined by the way the interlacing occurs.

Warp and weft are two basic concepts used in weaving to turn the yarn into a piece of fabric.

WARP are the yarns that run in a lengthwise direction (vertical or longitudinal) parallel on a loom/frame. They are also known as ends.

WEFT are the yarns that run in a widthwise direction (horizontal or latitudinal) perpendicular on a loom/frame. They are also known as picks.

During weaving, the loom holds the warp threads under tension allowing the weft to be inserted and interlaced. We can increase the fabric strength or compactness of the fabric by increasing the number of warp or weft threads while weaving.

This interlacing of warp and weft creates fabrics of different kinds.