



FIBERS

NATURAL & SYNTHETIC

There are Two Different Types of Fibers:

- Natural
- Synthetic (Manufactured/Man-Made)



1. NATURAL FIBERS

- Fiber that comes from natural sources, such as plants and animals.
- They are absorbent and more expensive to produce.
 - Cotton
 - Flax/Linen
 - Silk
 - Wool



2. Cotton

- **Comfortable**
- **Absorbent
(Hydrophilic)**
- **Wrinkles Easily**
- **Inexpensive**



3. Flax/Linen

- **Linen is Made From the Flax Plant**
- **Strong**
- **Lint-Free**
- **Wrinkles Excessively**



4. Silk

- Made from the Cocoon of the Silkworm
- Soft and Smooth
- Lustrous



5. Wool

- From the Fleece of Sheep
- Durable
- Warm
- Fire Resistant



6. SYNTHETIC FIBERS

- Fibers that come from chemical compounds.
- They are heat sensitive, less absorbent and less expensive to produce.
 - Nylon
 - Polyester
 - Acrylic
 - Rayon
 - Spandex
 - Acetate



7. Nylon

- Strongest Fiber
- Lightweight
- Heat Sensitive



8. Polyester

- **Most Widely Used**
- **Strong**
- **Resilient**
- **Retains Oily Stains**
- **Repels Moisture
(Hydrophobic)**



9. Acrylic

- **Wool Substitute**
- **Resists Wrinkling**
- **Tends to Pill**



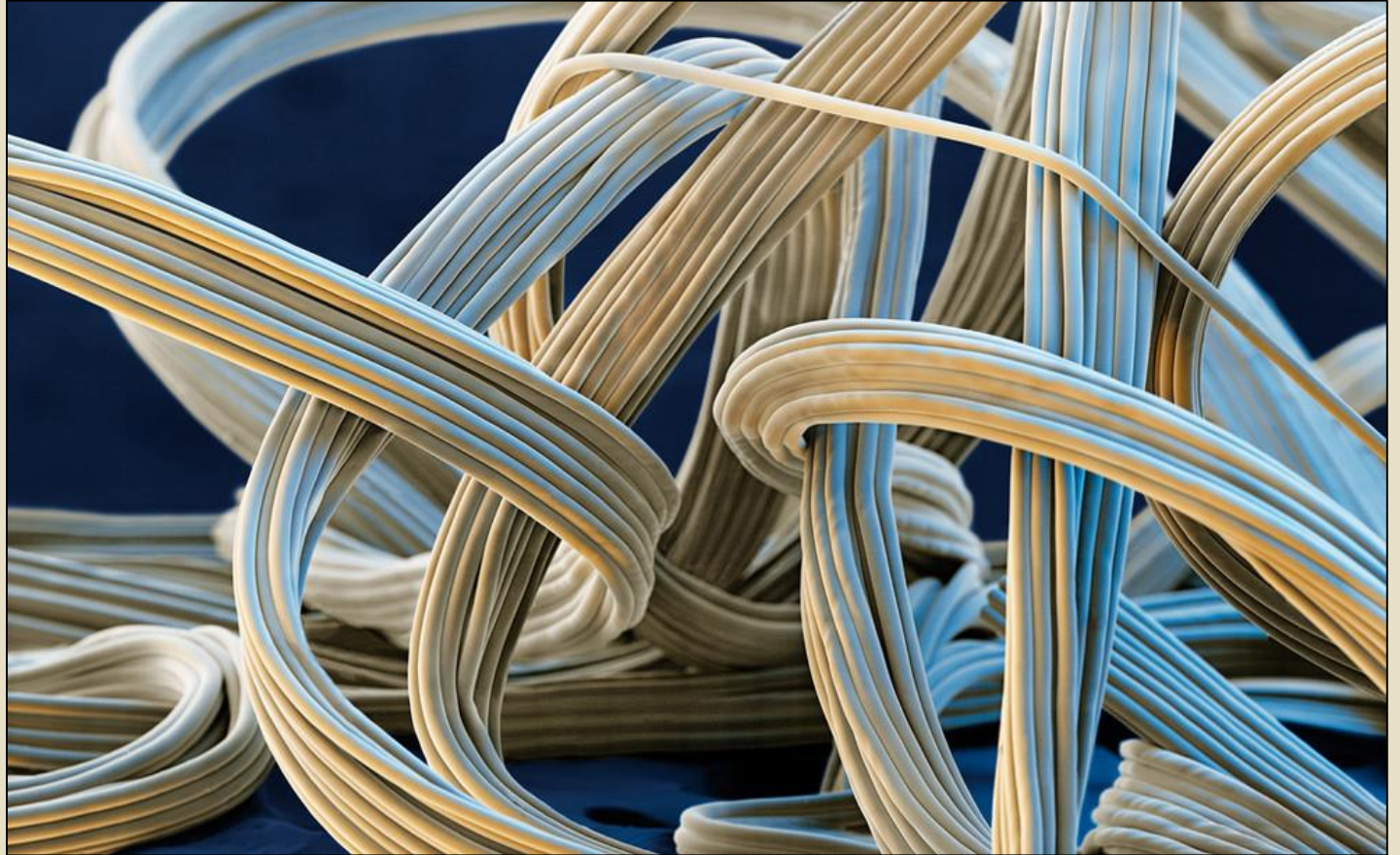
10. Rayon

- **First Manufactured Fiber**
- **Made from Wood Pulp**
- **Soft**
- **Absorbent**
- **Wrinkles**



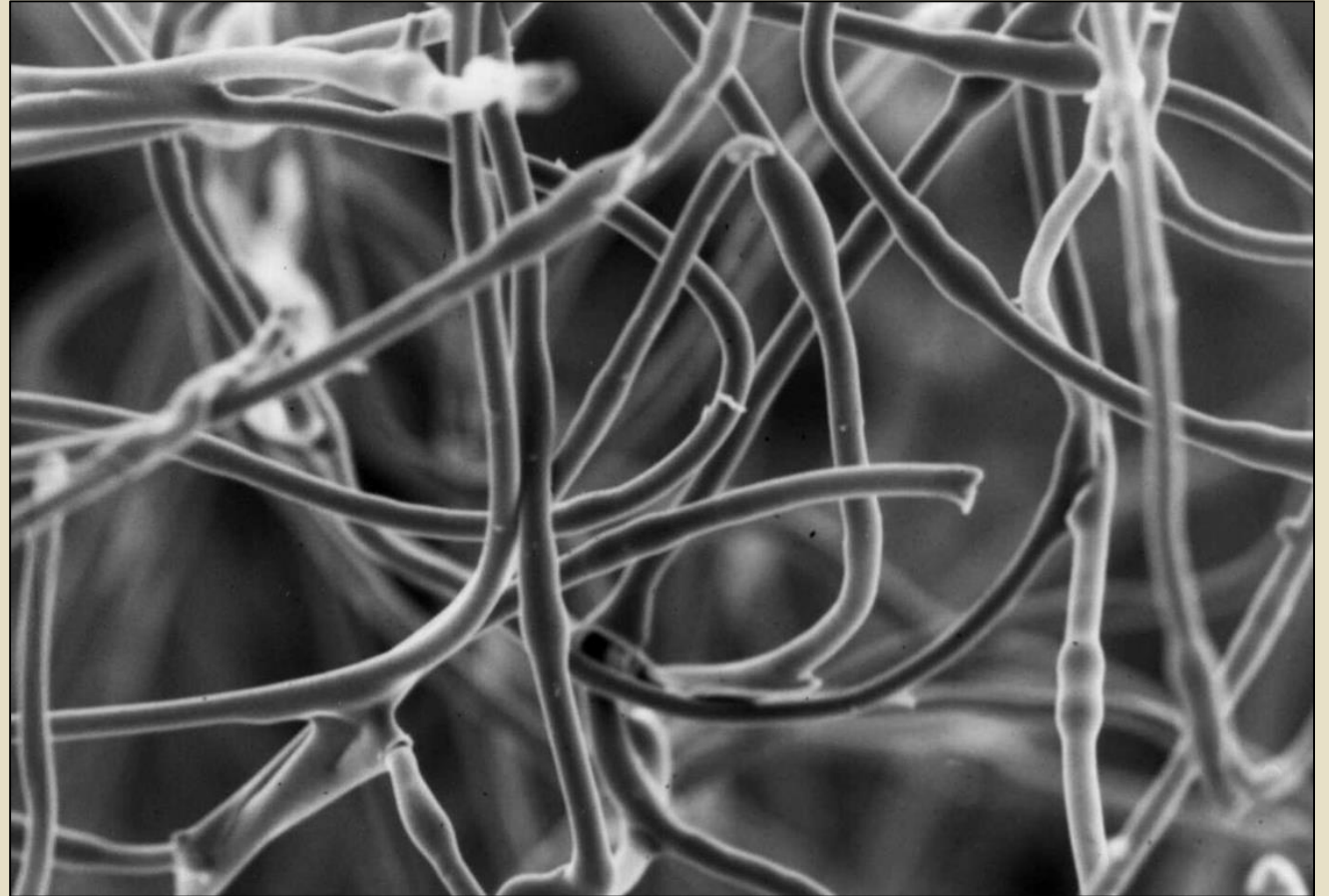
11. Spandex

- **Elasticity**
- **Stretch**
- **Resistant To:**
 - **Sun**
 - **Perspiration**
 - **Abrasion**
- **Heat sensitive**



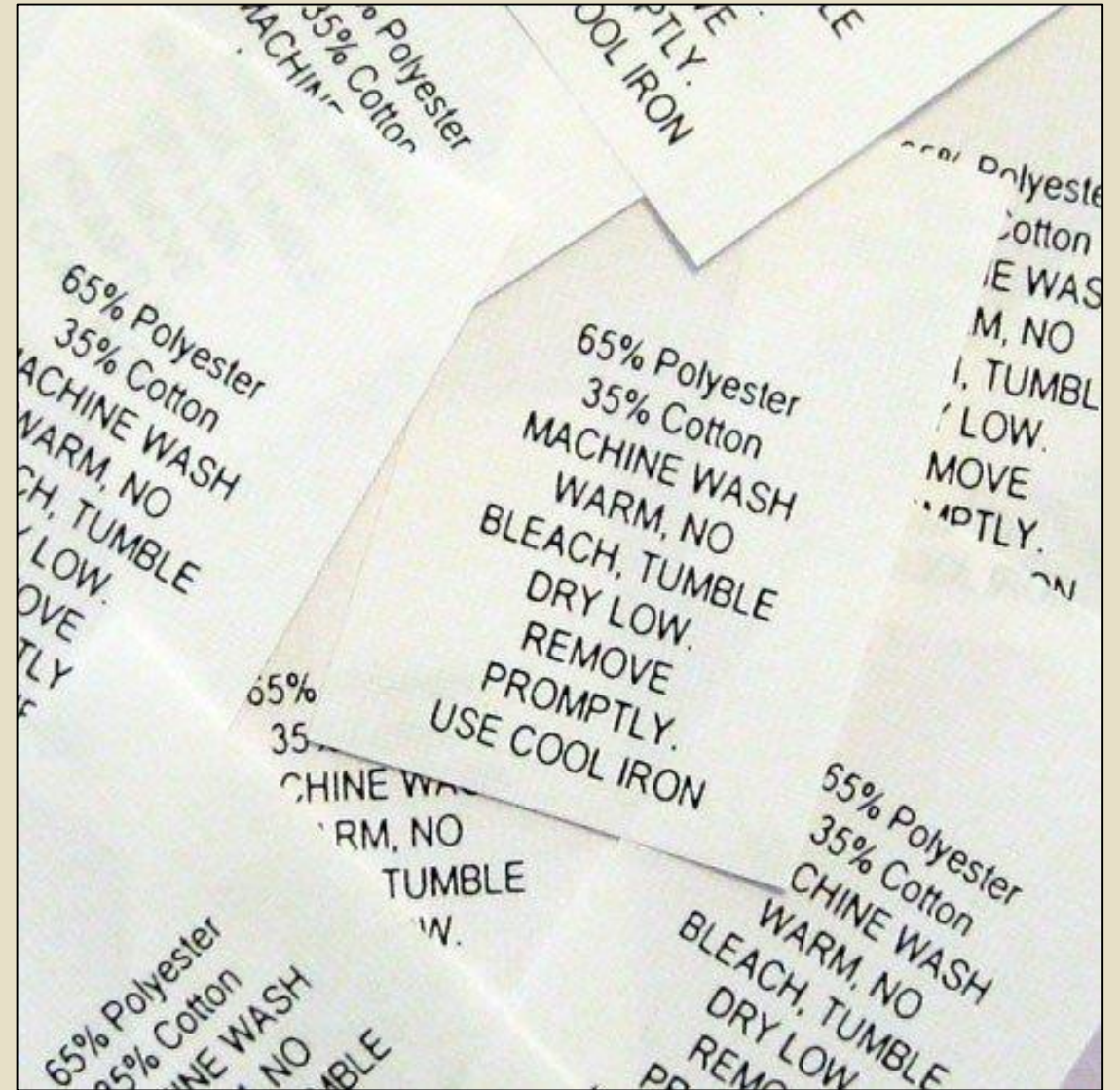
12. Acetate

- Absorbent
- Dries Quickly
- Silky Appearance and Feel



13. Fiber Blends

- Fibers are often blended together to increase strength, durability, absorption and other characteristics.
- Common Fiber Blends:
 - Cotton & Polyester
 - Wool & Nylon
 - Spandex & Cotton

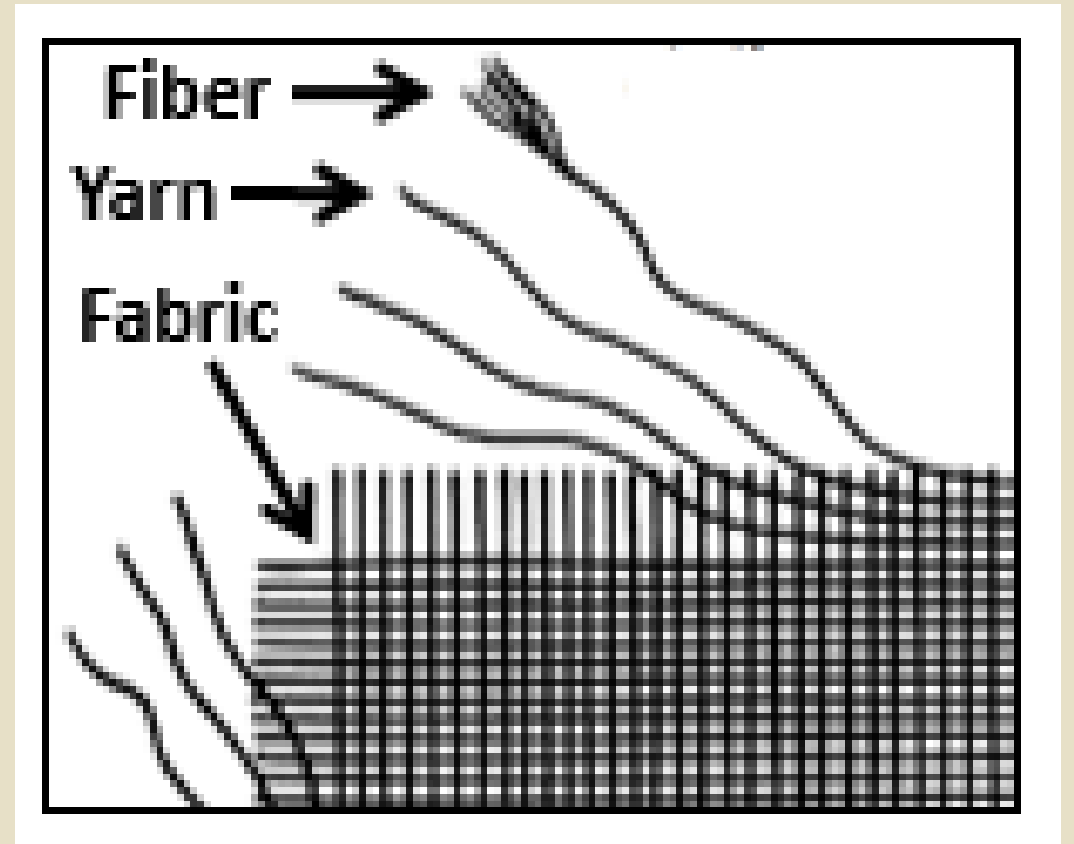




FABRIC CONSTRUCTION

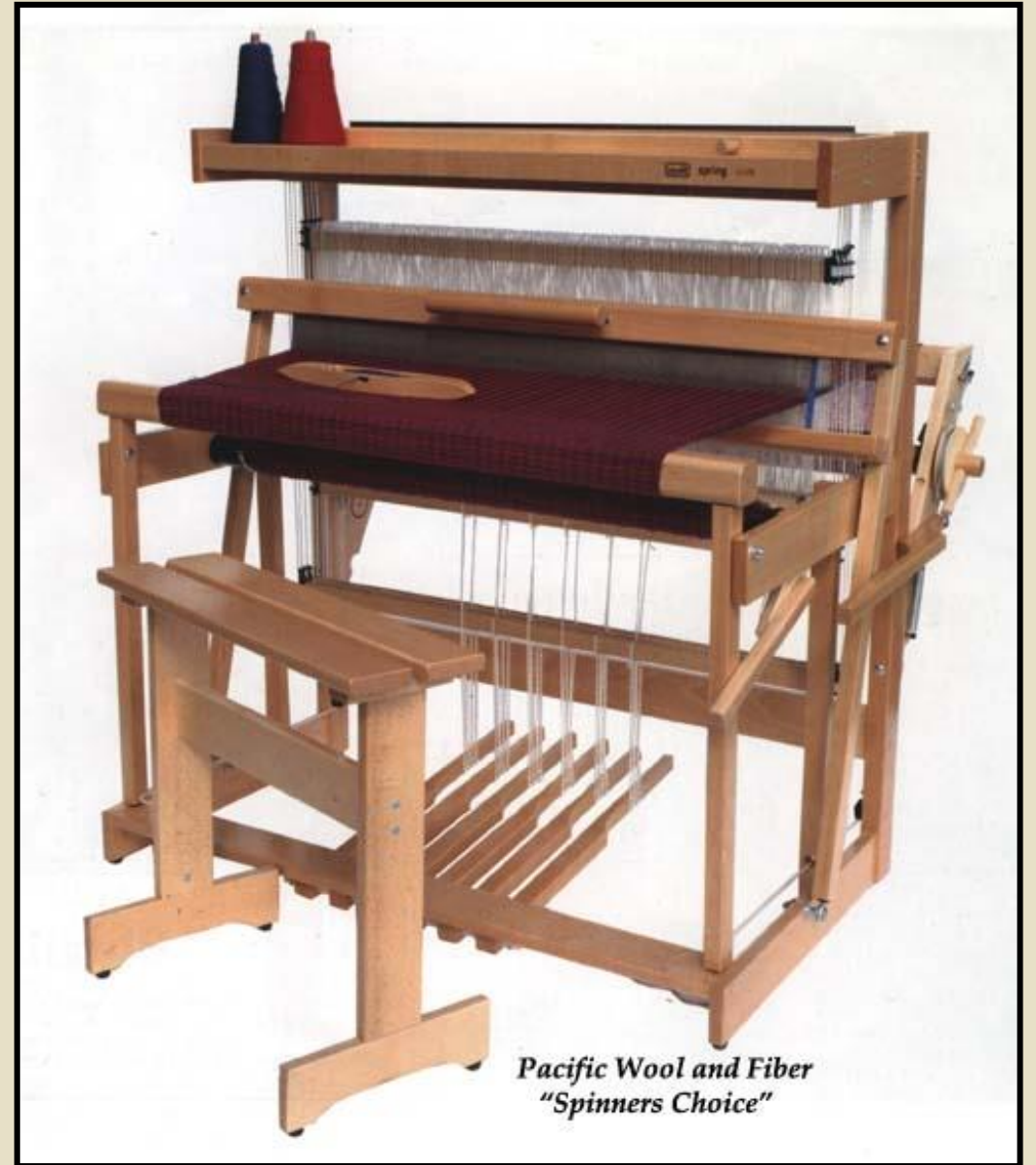
1. Fabric Construction

- All fabric is made from fiber, either natural or synthetic.
- The fiber is processed and twisted into yarn.
- The yarn is then woven or knit into fabric.



2. Woven Fabric

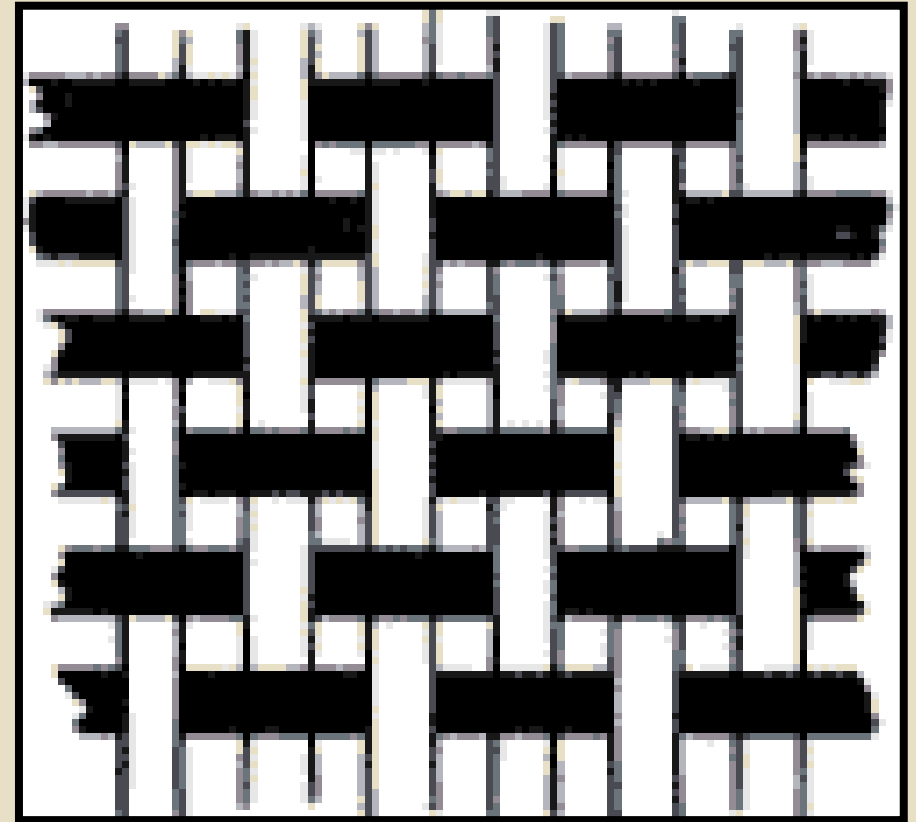
- Woven fabrics are created by the interlocking of two separate yarns, the warp and the weft.
- Warp: Top to Bottom
- Weft: Left to Right



3. Plain Weave

- The simplest weave.
- The filling yarn (weft) passes over and under each warp yarn and then alternates on the next row.

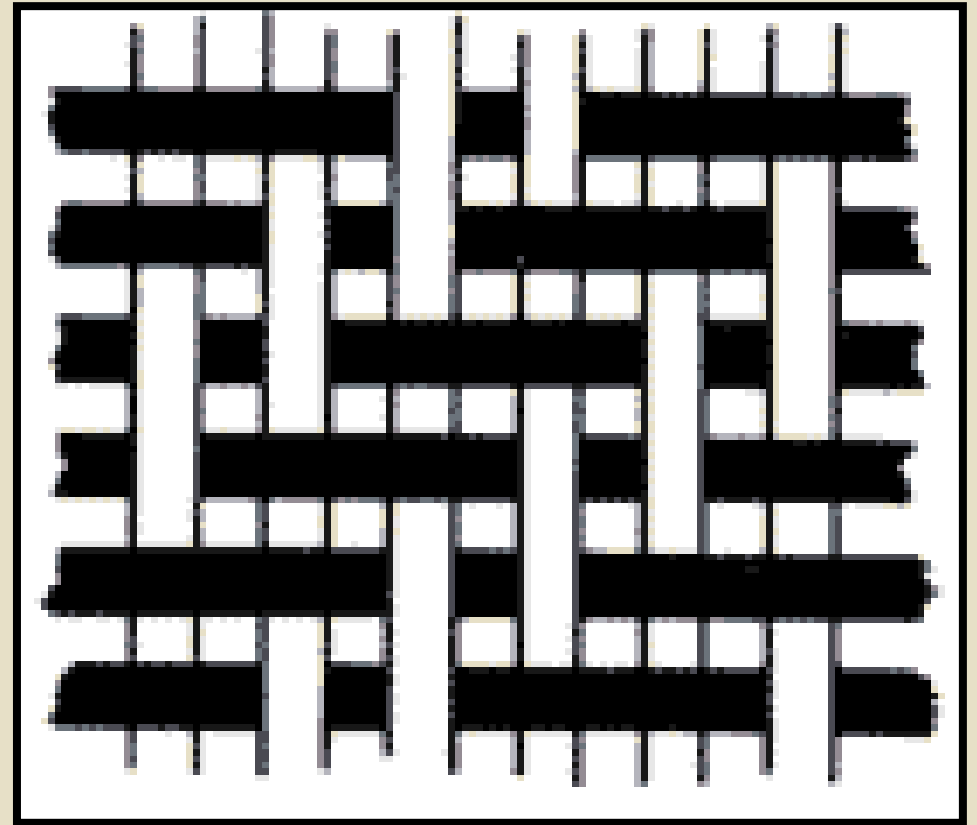
Plain Weave



4. Twill Weave

- The strongest weave.
- Recognized by the obvious diagonal ridges.
- The filling yarn (weft) passes over and under 2 or more warp yarns and then shifts to the right or left on each successive row.

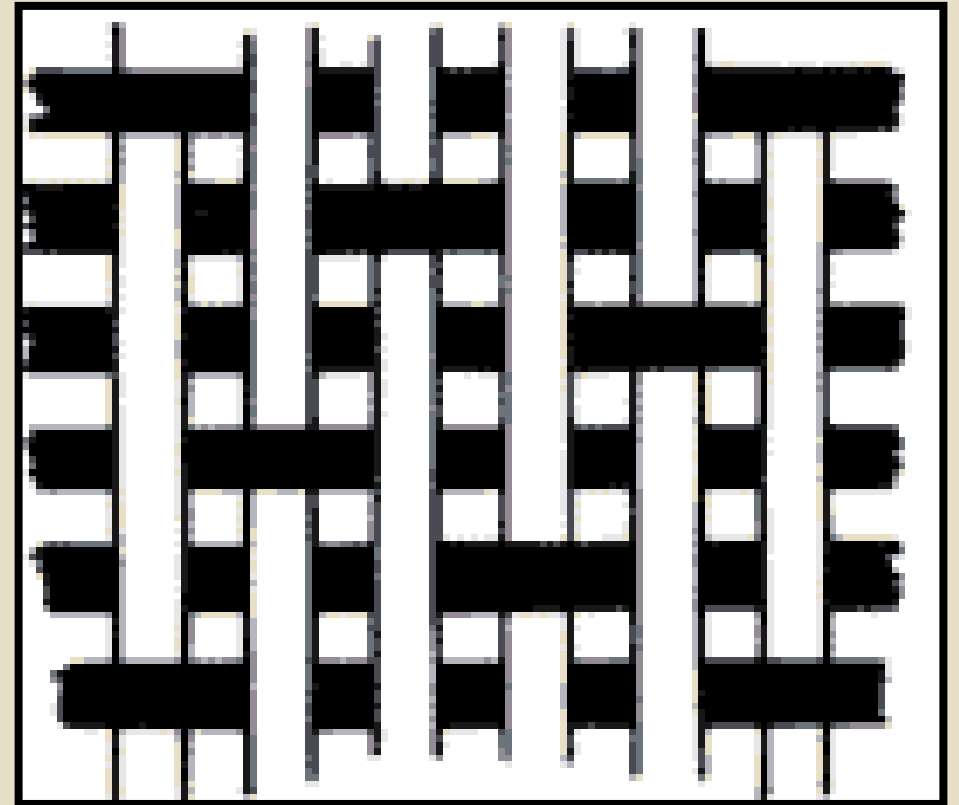
Twill Weave



5. Satin Weave

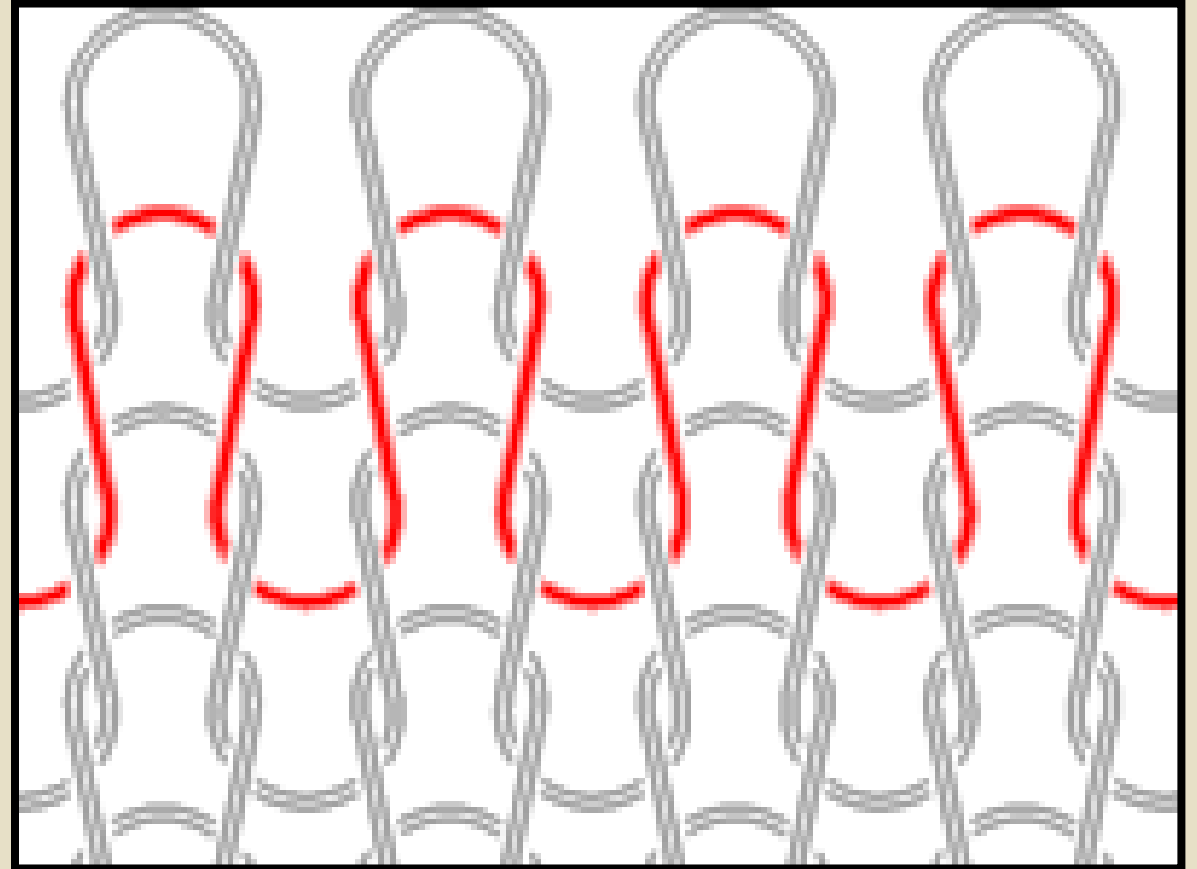
- The most lustrous weave.
- The filling yarn (weft) passes over then under 4 to 8 warp yarns, shifting and repeating on each successive row.

Satin Weave



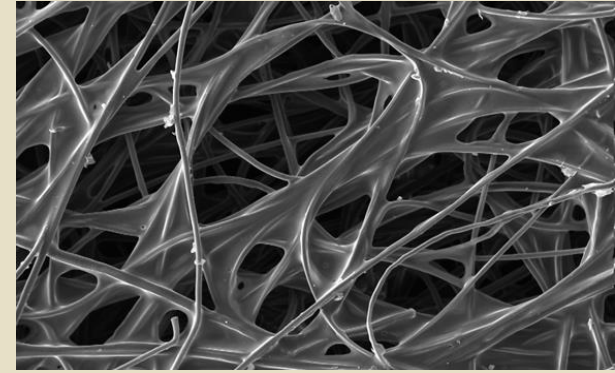
6. Knit Fabric

- Created by the continuous interlocking or looping of yarn.
- Knits are stretchy, easy to care for and inexpensive to produce.



7. Non-Woven Fabric

- Created by interlocking and shrinking a mass of fibers together with heat, moisture and pressure.
- Felt is the most common type of non-woven fabric.

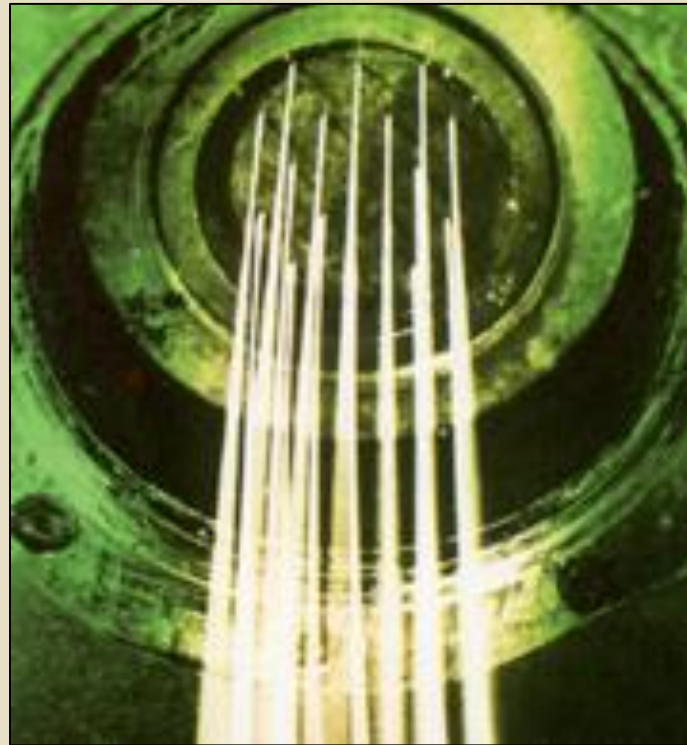




FABRIC FINISHES

1. Solution Dyeing

- Adding color to a synthetic fiber solution before it is extruded.



2. Yarn Dyeing

- Dyeing the yarns before they are woven or knitted into fabric.



3. Piece Dyeing

◦ Dyeing of fabric after weaving or knitting.



4. Product Dyeing

- Fabric is cut and sewn into the finished product and then dyed.



5. Printing

- Process of adding color, pattern or design to the surface of fabrics.



Classic Textile Patterns

Classic Textile Patterns			
Plaid	Pinstripe	Argyle	Pin Dot
			
Herringbone/Tweed	Floral	Hounds Tooth	Polka Dot
			
Gingham Check	Geometric	Tattersall's Check	Paisley
			