

Fabric



Structures

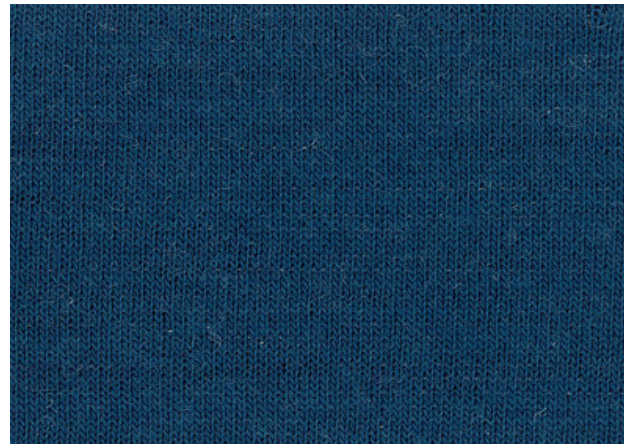
Fabric Structures

The three main structures used are :

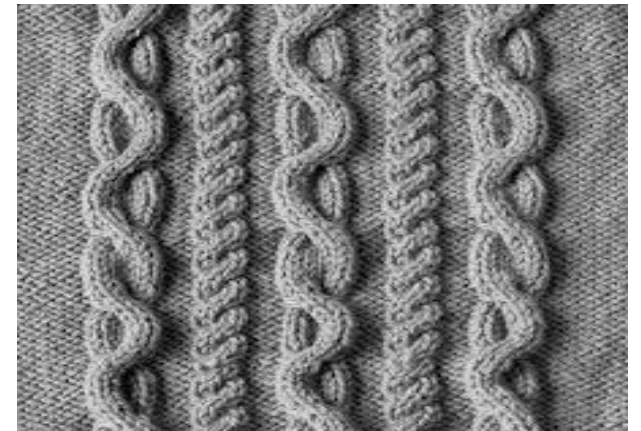
WOVEN FABRICS



KNITTED WEFT FABRICS



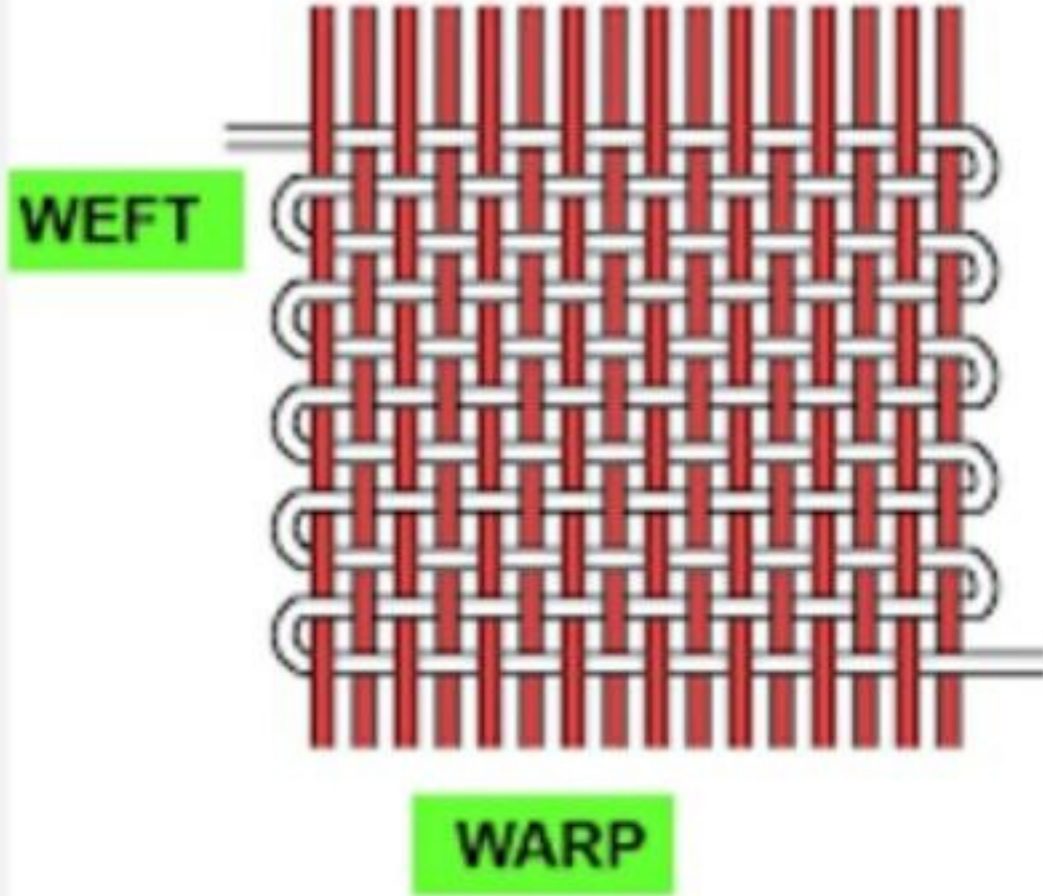
KNITTED WARP FABRICS



Woven Fabrics



Latitudinal



Longitudinal

THERE ARE THREE BASIC WEAVES IN WOVEN:



01



Plain weave



02



Twill Weave



03



Satin Weave

BASIC WEAVES IN WOVEN:

In a plain weave, the warp yarns pass alternately over one and then under one weft yarn. The adjacent warp yarns interlace exactly opposite to the previous one. Weft yarns interlace in the same manner as warp yarns.

Plain Weave



BASIC WEAVES IN WOVEN:

Diagonal lines on the cloth are found on the twill weaves. The twill will be described as Right Hand Twill (Z-twill) or Left Hand Twill (S-twill) depending on the twill direction. A pointed Twill or herringbone Twill compose vertical stripes of both right and left hand twills.



Twill Weave

BASIC WEAVES IN WOVEN:

Satin weave composes of long float yarns with minimum amount of interlacing. Satin weave can be either warp or weft faced depending on the type of yarn which is dominated on the face of the cloth. This structure provides the cloth with good reflectance of light and thus the cloth becomes lustre. However, these long float yarns give the cloth an adverse effect of poor wearing quality.

Satin Weave



APART FROM THIS BASIC WEAVES THERE ARE SPECIAL WEAVES AND CLASSIFIED AS FOLLOWS:



01

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Leno weave



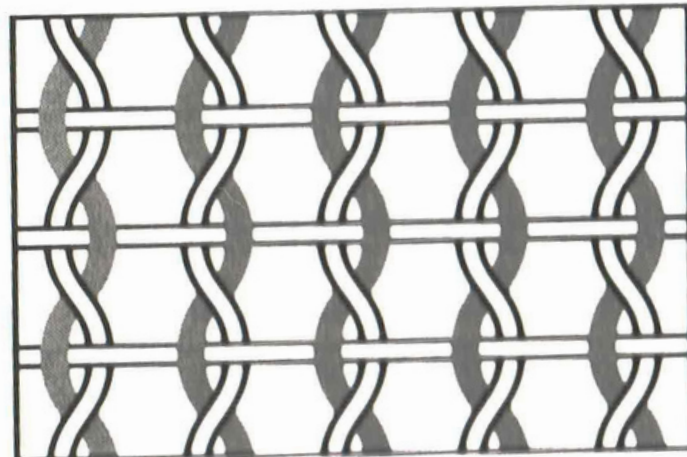
02

—
Pile weave

Leno Weave

The warp yarns twist back and forth in pairs on the weft yarns and firmly hold the weft yarns in the loops formed. Thus, the weft yarns in a leno weave can hardly shift in the warp direction.

Leno weave is used in fabrics having yarns spaced far apart in order to reduce yarn slippage.



Pile Weave

Pile weave is desirable for soft, warm handles and absorbent fabric. It is durable and can withstand long wear when high twisted yarn and compact construction are used. Besides, the pile introduces a decorative effect on the surface of the fabric.

The pile can either be produced by the warp yarn or weft yarn.

When the pile is produced by warp yarn, the fabric is referred to as a warp pile fabric.

If the pile is produced by weft yarn, the fabric is described as a weft pile fabric. Corduroy, Velvet



Before Cutting



After Cutting

KNITTED WEFT FABRICS



KNITTED FABRICS

Knitted fabrics are made by interlooping one or more ends of yarn. There are two main classifications of knitted fabrics:

- Weft knit fabrics are knitted fabrics in which yarns run horizontally, from side to side, across the width of the fabric.
- Warp knit fabrics are knitted fabrics in which yarns run lengthwise through the entire length of the fabric.

Classification of Weft Knit fabrics

A. Basic Weft Knit Fabrics

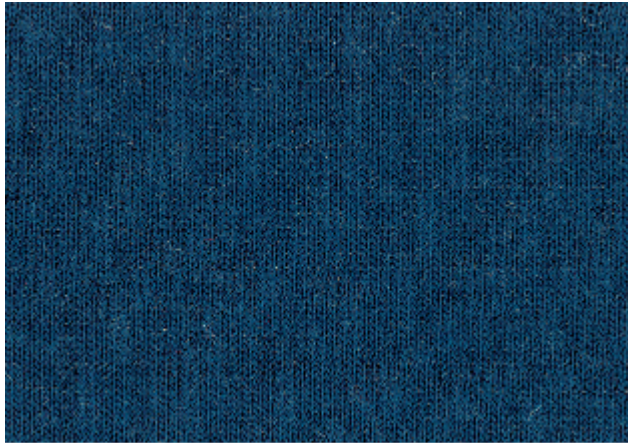
- Jersey
- Rib
- Purl

B. Specialized Weft Knit Fabrics

- Double Knits
- Pile Knits (Sliver Knits)
- Knitted Terry
- Knitted Velour
- Interlock Knits

Weft Knit Fabrics

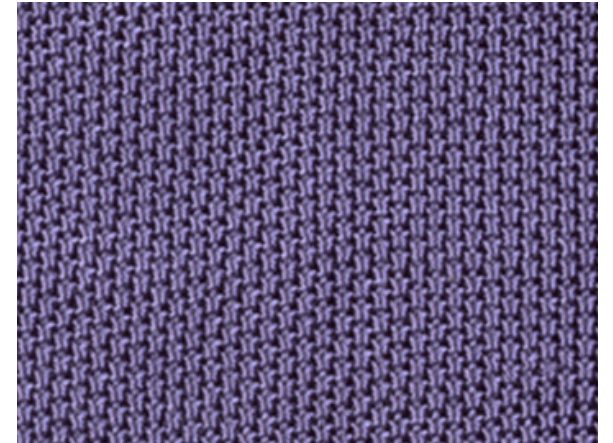
Jersey Knit Fabrics



Rib Knit Fabrics



Purl Knit Fabrics

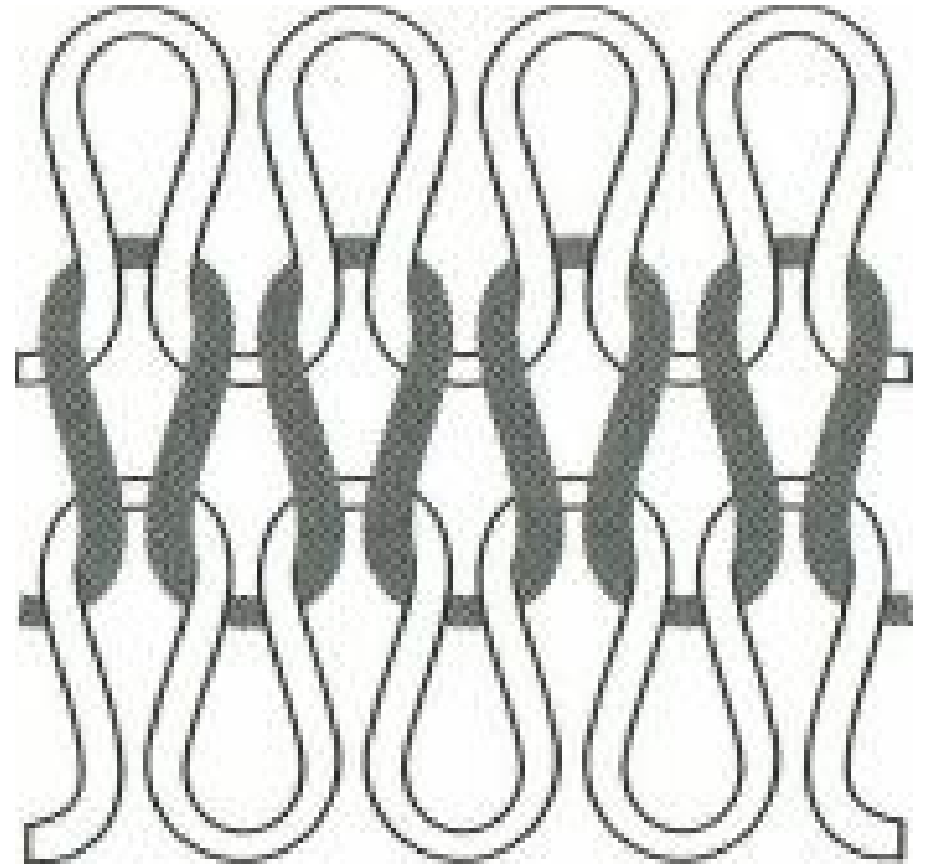


Basic Weft Knit Fabrics

Jersey Knits

Jersey fabrics (single knit) have all loops drawn to one side of the fabric. All the stitches are plain stitches. The smooth side is the face while the back has a textured and mottled appearance.

Jersey knit fabrics have similar stretch properties in both the length and width directions.



Basic Weft Knit Fabrics

Rib Knits

Rib knit fabrics are made with alternative wales (vertical loops) of plain stitches and purl stitches on both sides of the fabric so they possess a distinct lengthwise rib effect on the fabric.

They lie flat and do not curl at the edges as that jersey knits. Rib knits have greater elasticity in widthwise direction.



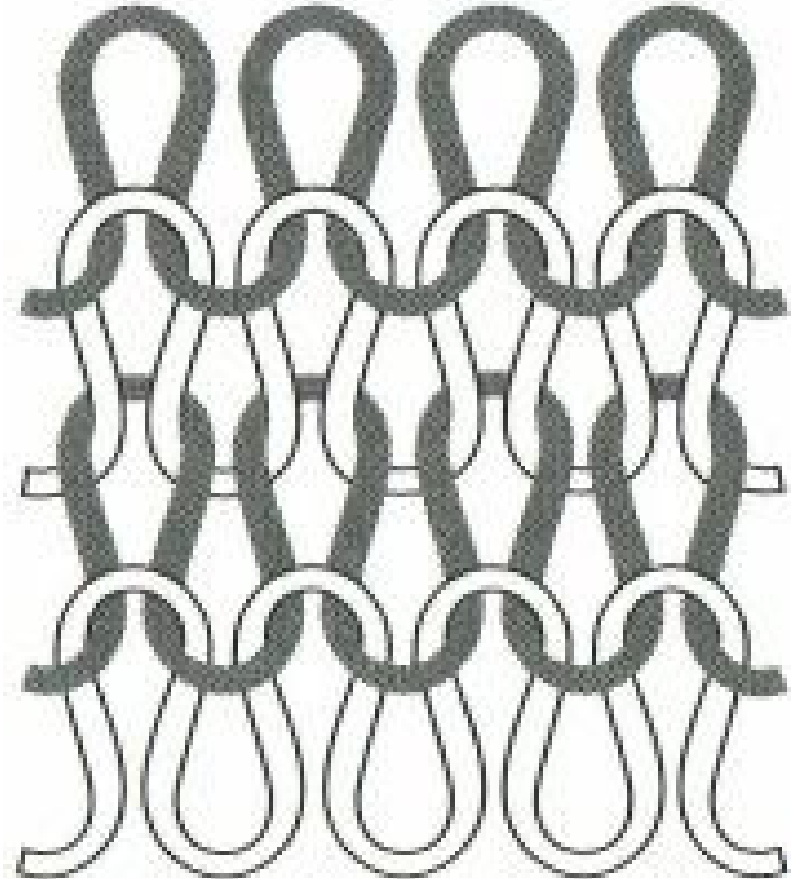
Basic Weft Knit Fabrics

Purl Knits

Purl knit fabrics are made with alternate courses of plain stitches and purl stitches on the fabric.

They are similar to rib knit fabrics and lie flat on a horizontal surface.

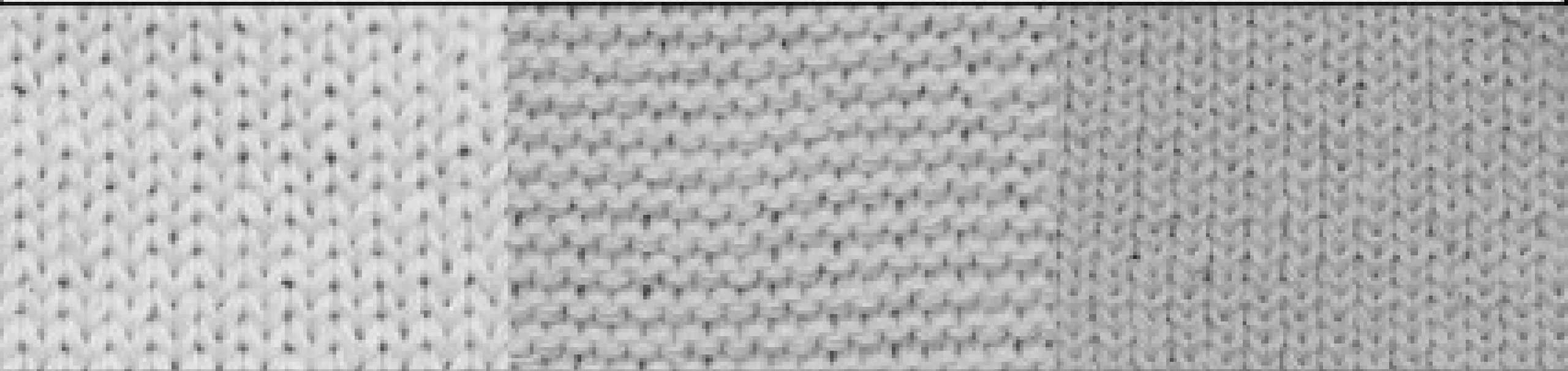
They have good elasticity in all directions but possess the greatest stretchability in the length direction.



Plain

Purl

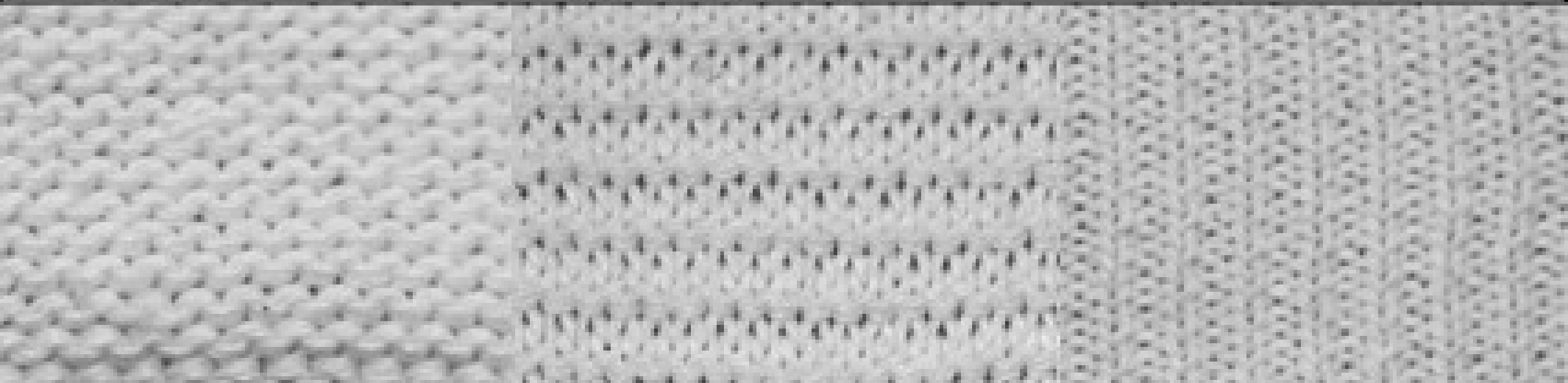
Rib



Plain - reverse

Purl - stretched

Rib - stretched



Specialized Weft Knit Fabrics

Double knit fabrics are a special type of rib stitch fabric with close stitches. Thus, the stability of the fabric is good. The appearance of simple double knits is similar on both sides of the fabric and the fabrics are usually **thick and heavy**.



Pile Knits (Sliver Knits) are made by feeding staple fiber together with the ground yarns to the needles during the knitting action. The fabrics are usually treated with finishing to produce a fur-like effect. The appearance and handle of the pile knits are governed by the finishing treatment and the fibres used.



Knitted terry fabrics compose of loop yarn and ground yarn. The ground yarns form the base of the knitted fabric while the loop yarns form the loop pile of the fabric when they are pulled out. Knitted terry fabrics are soft, flexible, and absorbent.



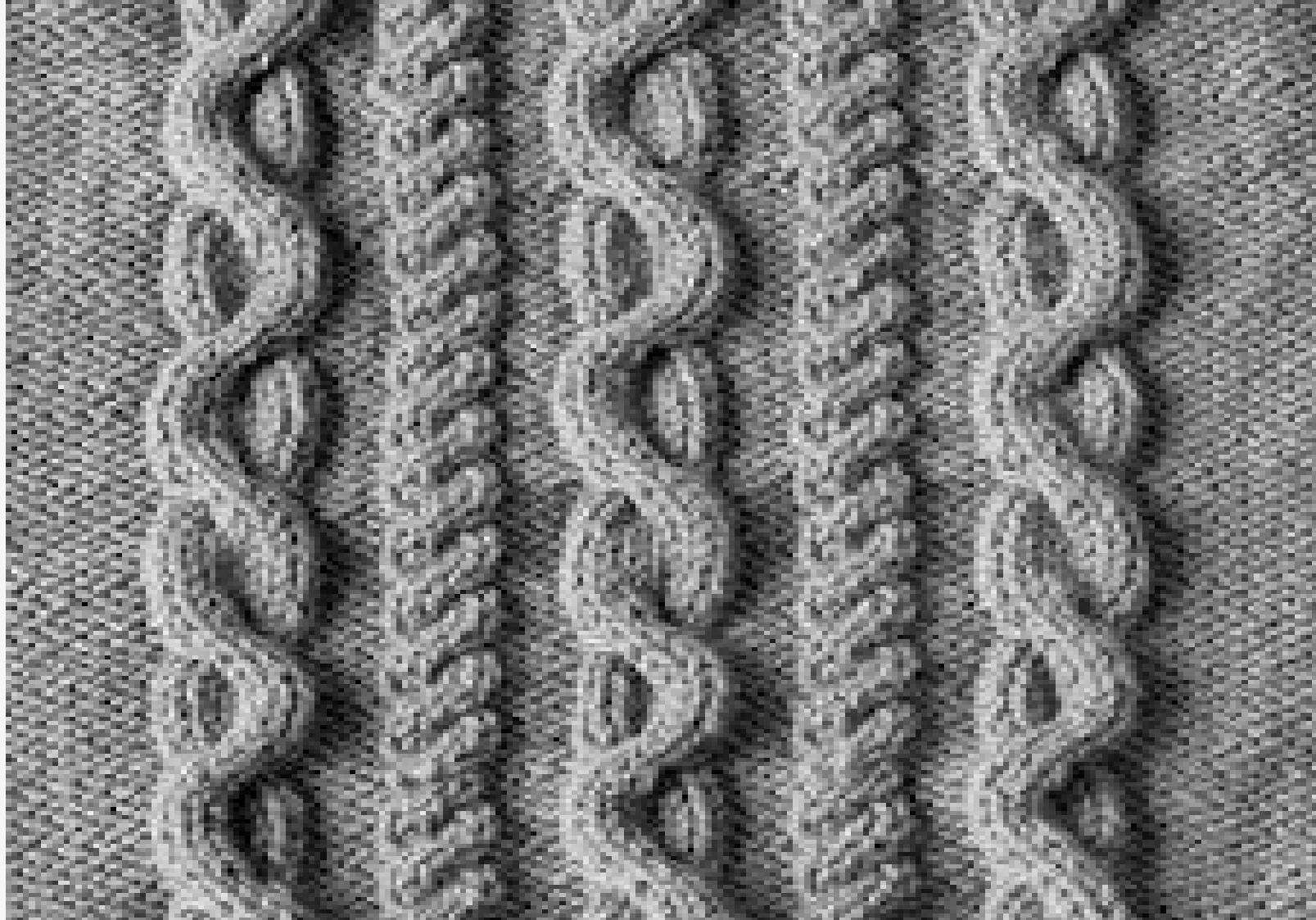
Knitted velour fabrics are similar to knitted terry except the loop pile is cut and brushed. Knitted velour fabrics are soft, hairy, and flexible.



Interlock knit fabrics are similar to rib knits except for the columns of wales being directly behind each other. Plain stitches appear on both sides of the fabric and they are allocated in such a way that the back of any given plain stitch will reveal another plain stitch directly behind it. Interlock knits are smoother, more stable, and have better insulation.



KNITTED WARP FABRICS



Warp Knit Fabrics

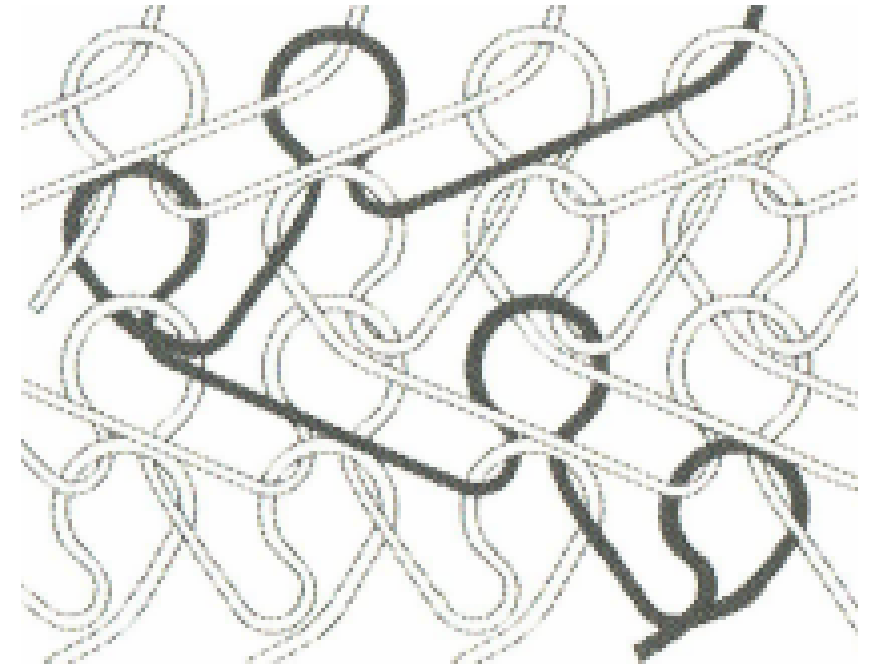
Tricot Knit

The machine used for producing tricot knit has one or more warp beams mounted on it. Yarn guides set in each guide bar control each set of yarns fed to a row of needles arranged across the width of the machine. 'Flue greater the number of guide bars, the greater the design flexibility.

The gauge in tricot knit is expressed as the number of knitted elements per bar inch or per 100mm. The higher the gauge, the lighter the fabric and the greater its strength per mass.

Tricot fabrics are porous and permeable to water vapor and air. Thus, the wearer feels comfortable. Tricot fabrics also give bulky without undue weight. They are soft, wrinkle-resistant, and have good drapability.

They possess good abrasion resistance, high bursting and tearing strength as well as controllable elasticity. They do not run or fray.



Raschel knits are made with heavy yarns and usually have an intricate, lacelike pattern. The gauge of raschel knits is expressed as the number of needles per 2 inches or per 100mm.

Since Raschel machines are versatile and can knit every type of yarn in any form, the characteristics and properties of the fabrics produced can be in great variation.

