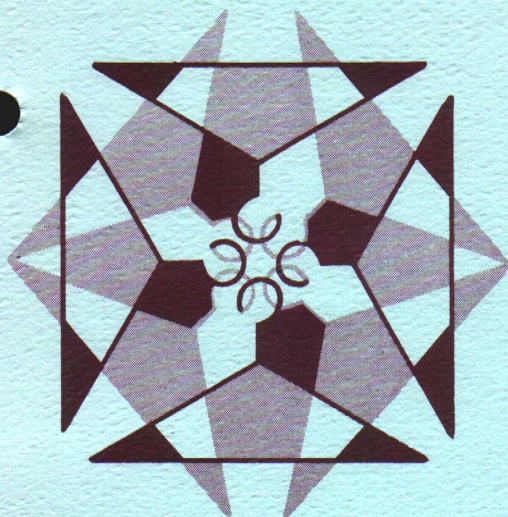


FILE COPY
DO NOT REMOVE

MACHINE KNIT FABRICS

Characteristics and Care

COOPERATIVE EXTENSION SERVICE MICHIGAN STATE UNIVERSITY

BY BERNETTA KAHABKA
Extension Specialist in Clothing

Knit fabrics are formed by interconnecting loops of yarns either by hand or machine. Apparel made of today's versatile machine-knit fabrics are comfortably non-confining, wrinkle resistant, drapeable and easily cleaned. However, they may also snag, shrink, and bag and can be warm and heavy.

Since they are also heavier, and have a firmer drape, they tend to be warm. They are frequently used in suits and dresses. Curling edges are less of a problem with these knits than with single-filling knits.

Filling knits generally have more crosswise stretch than warp knits.

KINDS OF KNITS

Knits are classified according to the direction in which the loops are interconnected.

Warp knits are interlooped in the lengthwise (vertical) direction and are always machine products.

Filling knits, like hand knitting, interloop in the crosswise (horizontal) direction and generally have more crosswise stretch than warp knits. Filling knits can also be machine made.

Single Filling Knits

These knits are sometimes called jersey fabric. They have a definite fabric face of flat lengthwise ribs. They have a contrasting back of raised horizontal ridges. Cut edges on lightweight single filling knits may curl so that seams do not lie flat. Knits of this type are drapable, of varying weights and are used widely in sweaters, T-shirts, and as an outer fabric in laminating two fabrics together (bonded fabrics).

Double Knits

Double knits are filling knits which look the same on the face and back sides unless the face side is textured or patterned. These knits retain shape better and are more wrinkle-resistant than single-filling knits.

Tricot Knits

These are warp knits with lengthwise wales on the fabric face and crosswise ribs on the back. They are typically fine, light-weight knits. Generally, tricot forms the backing fabric in bonded or laminated fabrics. They are also used in lingerie.

Raschel

Raschel is a versatile warp knit fabric made of novelty yarns of varying weights. Fabrics can look either open and lacy or like woven fabrics. They are used in novelty apparel, tulles and hairnets.

VARIETY IS THE RULE

Today's knits have a variety of characteristics — very stretchy to fairly rigid; light to heavy; soft or crisp; dull or very shiny; open or porous to very compact or solid; very plain to very patterned.

A particular knit fabric will have a certain set of properties based on the type of knit (warp or filling, single or double). Furthermore, fiber content, yarn construction, dyeing methods and finishing processes influence how well the knit will keep its shape, size and appearance and how the knit apparel can best be maintained.

FIBERS

Fibers, natural or manufactured, make their specific contributions to knits.

Cotton is good for warm weather comfort and washability, although it may shrink.

Wool is warm and resilient.

Polyester and nylon retain shape, are shrinkage resistant and resilient.

Acrylics are bulky, have fluffy covering power and are shrinkage resistant.

Rayon and acetate are lustrous and easy to dye.

YARNS

Yarns themselves are as varied as the fibers from which they are made and the fabrics in which they are used. They can be: irregularly shaped or round, dull or shiny, thick or thin, texturized or smooth (non-texturized).

Variations include:

— **Smooth, regular filaments**—untextured and usually shiny.

— **Texturized filaments**—smooth, manmade fiber filaments texturized by crimping, looping and coiling to increase the fabric's stretchability, bulk and absorbency. Texturizing reduces fiber pilling. (Due to abrasion, little balls of fibers, called "pills," form on the surface of a fabric.) Textures can be heat-set into polyesters and nylons. These synthetic fibers are thermoplastic (they soften when heat is applied, and harden when cooled) and therefore can be set into a desired shape. Texturized filaments are more frequently used in knits than other yarn types.

Spun yarns—short, untexturized fibers, but less smooth than untexturized, regular-filament yarns.

Slub yarns—thick and thin areas within a single yarn, giving fabrics an irregular surface texture.

Bouclé yarns—looped, complex yarns which create interesting surface textures.

COLOR

Color can be applied in the following ways:

Solution dyeing—applied to manufactured fibers in solution before filaments or yarns are formed.

Fiber dyeing—applied to loose fibers before they are spun into yarn.

Yarn dyeing—applied to yarn after it is spun but before it is knitted into fabric.

Piece dyeing—applied to a knitted fabric.

Printing—applied to knitted fabric with resins, heat, and pressure.

FINISHING

This final phase in knit fabric production is called a grooming process. Finishing gives the knit fabric its bulk or thickness, fabric "hand" (feeling to the touch), size and stability.

Fabrics made from thermoplastic synthetic fibers, such as polyesters and nylons, which can be heat-set, are generally stable and often very crisp. (Acrylic and acetate knits are not heat-set.)

BONDING OR LAMINATING

Lightweight and openly constructed knit fabrics are given more body and stabilization if properly bonded or laminated.

BUYING KNIT CLOTHES AND FABRICS

A knit garment which stretches or "gives" for wearing comfort, **keeps** its original shape without bagging or sagging and **won't shrink** would be ideal, but is virtually impossible.

Can we expect an optimum degree of extensibility ("give") and dimensional stability (shape-keeping quality) in the same fabric? The more extensibility—the less dimensional stability and vice versa.

The garment design and pattern sizing for knits should allow freedom of movement without stretching the fabric so much that it is distorted or sags and bags.

Shrinkage Allowance

Some manufacturers allow for shrinkage in varying percentages, depending on the fiber content, type of knit and the end use of the garment.

For Example:

- 1% shrinkage in a cotton knit T-shirt finished with a heat-setting resin.
- 4% shrinkage in an acetate jersey single knit.
- 8% shrinkage in a novelty knit.

Read the Label

Unless indicated on a hangtag or label, there is no accurate reliable way of knowing or determining how much shrinkage could occur in a knit.

For Example:

Residual shrinkage given as a percentage on a label or hangtag indicates that even after shrinking in manufacturing, the fabric or garment may shrink by that percentage in washing or drycleaning.

Then There is YOU, THE CONSUMER!

How you want clothes to fit—tight, snug, easy, loose—is your choice. If you buy a tight-fitting knit dress and it shrinks 3 to 4% or more, it will shrink out of fit for you. An “easy” original fit may be wearable for a longer period of time.

Check knit fabrics and clothes for imperfections such as:

— Manmade fiber knits finished (heat set) off grain with bowed or skewed ribs, patterns, and stripes.

— Individual yarn streaks (barre) all across a garment section or the fabric, reflecting a different luster or color.

— Color variation caused by differences in dye lots (especially when buying matching or coordinating separates such as toppers, jackets, blouses, vests and slacks, skirts and shorts).

— Fabric folds, double folds in slacks, wrinkles and creases which will not press out because they are heat set.

— Snags.

CARE OF KNITS

There is no substitute for **specific care instructions**; nor is there a substitute for **following care instructions specifically**.

Specific care instructions for a knit fabric are more

vital than for a woven fabric since knit fabrics are more stretchable and tend to be less stable.

While a heat-set polyester or nylon fiber knit may be very dimensionally stable, it may change somewhat when subjected to high washing temperatures, drying temperatures or steam.

“Only” is an important word in care instructions. It means exactly what it says:

— Dryclean “ONLY,”

— Handwashable “ONLY.”

COMPLETELY WASHABLE doesn't mean you can wash it any way without reservations.

For Example:

Some polyester or nylon double knit fabric clothing may be successfully cleaned in a regular wash cycle, but those with trouser or pleat creases will retain those creases better in medium washing and drying temperatures.

PROCEDURE FOR KNIT CARE

When cleaning knits in any method, close hooks and eyes and other fastenings to avoid snags.

If pressing is necessary, low temperatures and light pressure will avoid edge marks and shiny surfaces.

Knit garments which are apt to extend lengthwise on hangers (those other than manmade fiber heat-set knits) should be stored flat.

(Be sure to study the table of Knit Fabric Characteristics on page 4).

Knit Fabric Characteristics Which Influence Handling in Home Sewing

The type of knit influences the pattern you select.	Select firm knits for tailored straight lines; soft knits for draped lines. Patterns especially designed for knits may have less ease than those designed for woven fabrics.
Knit fabrics can stretch in handling.	Cut out pattern pieces carefully. Let pieces relax 24 hours before assembling.
Some knit fabric edges curl.	Use patterns in which seam edges are not on the straight of the grain of the fabric.
Knit fabrics can snag easily.	Cut out and handle on a smooth surface. Use fine, sharp needles and pins, sharp scissors. Use special small ball point sewing machine needle.
Some knit fabrics are tough.	Use fine needles. Change needles often.
Some knit fabrics are easily oil-stained.	Use chalky rather than waxy marking chalk. Keep sewing machine surfaces free of oil.
Knit fabrics are extensible in varying degrees.	Use extensible threads. Core spun threads may be desirable. Loosen both upper and lower thread tensions. Use number of machine stitches per inch which balance appearance and desired seam strength.
Some seams in knit garments need stabilizing.	Use straight or bias tape (depending on amount of stability required) for shoulder, waistline, armseye, crotch seams.
Some knit fabrics in more tailored garment designs need shape-retaining support.	Use extensible interfacing and backing fabrics (such as tricot knit) for light support. Use more rigid interfacing and backing fabrics (woven) for more support. Always use support fabrics which will meet care requirements of the outer knit fabric.

Acknowledgment

The helpful suggestions and review by Nancy Harries, Department of Human Environment and Design, MSU, are very much appreciated.